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ENVIRONMENTAL ASSESSMENT BOARD



ONTARIO HYDRO DEMAND/SUPPLY PLAN HEARINGS

VOLUME: 166

DATE: Monday, June 22, 1992

BEFORE:

| | |
|------------------------------|----------|
| HON. MR. JUSTICE E. SAUNDERS | Chairman |
| DR. G. CONNELL | Member |
| MS. G. PATTERSON | Member |

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ENVIRONMENTAL ASSESSMENT BOARD
ONTARIO HYDRO DEMAND/SUPPLY PLAN HEARING

IN THE MATTER OF the Environmental Assessment Act,
R.S.O. 1980, c. 140, as amended, and Regulations
thereunder;

AND IN THE MATTER OF an undertaking by Ontario Hydro
consisting of a program in respect of activities
associated with meeting future electricity
requirements in Ontario.

Held on the 5th Floor, 2200
Yonge Street, Toronto, Ontario,
Monday, the 22nd day of June,
1992, commencing at 10:00 a.m.

VOLUME 166

B E F O R E :

| | |
|----------------------------------|----------|
| THE HON. MR. JUSTICE E. SAUNDERS | Chairman |
| DR. G. CONNELL | Member |
| MS. G. PATTERSON | Member |

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| <u>JANE BERNICE TENNYSON,</u> | |
| <u>FREDERICK GEORGE LONG,</u> | |
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| 728 | Undertaking 478.29 entitled: Darlington Energy Park, Energy Extraction Delivery System. | 29270 |
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| 684.37 | Ontario Hydro undertakes to make an inquiry as to what the conclusion was based on in the Darlington Energy Park Study, with respect to hot water. | 29275 |
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1 ---Upon commencing at 10:03 a.m.

2 THE REGISTRAR: Please come to order.

3 This hearing is now in session, please be seated.

4 THE CHAIRMAN: Mr. Campbell?

5 MR. B. CAMPBELL: Dr. Long advises me
6 that there is a correction he wishes to make to an
7 answer he gave last week, and if he could be afforded
8 that opportunity, I have spoken to Mrs. Mackesy about
9 it.

10 THE CHAIRMAN: Thank you.

11 AMIR SHALABY,
12 JOHN KENNETH SNELSON,
13 JANE BERNICE TENNYSON,
14 FREDERICK GEORGE LONG,
15 BRIAN PAUL WILLIAM DALZIEL,
16 HELEN ANNE HOWES; Resumed.

17 DR. LONG: This is with respect to a
18 question from Mr. Wright, he asked me whether there
19 were any non-board members on board committees and I
20 indicated that they just included board members, but on
21 checking the annual report I noticed that on one of the
22 committees, that's the pension and insurance fund
23 investment committee, Mr. Burdette who is the senior
24 vice-president of finance, who is not a board member,
25 is a member of that committee.

26 MR. B. CAMPBELL: Thank you, Mr.
27 Chairman.

1 THE CHAIRMAN: Mrs. Mackesy?

2 MRS. MACKESY: Thank you.

3 Before continuing with my
4 cross-examination this morning, I would like to make a
5 correction to the transcripts at the beginning of my
6 cross-examination last Thursday morning. This is in
7 Volume 165 at page 29166. This correction involves
8 interrogatory numbers.

9 In line 9 on page 29166, Interrogatory
10 5.29.5 should read 10.29.5. And in line 13 again
11 5.29.5 should read 10.29.5. And again in line 15,
12 5.29.5 should read 10.29.5.

13 And in line 16, 10.29.5 should read
14 10.29.5 Supplementary.

15 Now to continue with my cross-
16 examination.

17 CROSS-EXAMINATION BY MRS. MACKESY (Cont'd):

18 Q. I am still having some difficulties
19 with interpreting the information on the distributed
20 generation case as presented in Exhibit 683.61, that is
21 10.29.5 Supplementary, specifically with page 5 and
22 with the emission charts.

23 First I have two general questions. Did
24 anyone on the panel work on the preparation of this
25 material?

1 MR. DALZIEL: A. Not directly.

2 Q. Thank you. And am I right in
3 thinking that the distributed generation case was not
4 studied in as much detail as the Update cases in
5 Exhibit 646?

6 A. In some areas, yes, but in some
7 areas, no.

8 The degree to which a case may be
9 examined in detail depends what particular information
10 you want to try and study and understand from the case.
11 So, in some areas, Case D was examined in more detail
12 than other cases, and an example of that would be the
13 nature of the transmission flows, for example.

14 Q. You referred to it as Case D, did
15 you?

16 A. Yes.

17 Q. I'm sorry, I hadn't heard that term
18 before.

19 A. I'm sorry. I am referring to it as
20 the distributed generation case.

21 Q. I see. Now to turn to page 5 of
22 Exhibit 683.61, this is a table that shows base and
23 peak new supply generating unit additions to the 16
24 divisions between 1992 and 2015, and my question is, is
25 there more detailed written information available about

1 how the numbers and sizes of units and distribution of
2 units was arrived at?

3 A. Not that I am aware of. My
4 understanding is that the size of the units was an
5 input assumption to the examination of this case. The
6 300 megawatt size is a base unit and the 150 megawatt
7 size is a peaking unit.

8 The way that generation then is assigned
9 to the various areas is a function of the transmission
10 capability, a combination of the transmission
11 capability within that division and the load
12 requirements within that division.

13 Q. So you don't have anything more that
14 you could provide as background for the particulars of
15 what appears on page 5?

16 A. Not that I am aware of. I think this
17 is the result of some analyses that's done and this is
18 the summary result of that analyses.

19 Q. Thank you. Now, with regard to the
20 emission charts on pages 9 through 11, I would like to
21 turn first to page 11, the carbon dioxide chart. I am
22 just going to read out what I think it means and then
23 you can tell me if I am wrong. I will use 2017 as an
24 example year.

25 Now, does page 11 estimate that about 4

1 tetragrams of carbon dioxide would be produced in 2017
2 by generation using lignite?

3 A. I believe so, yes.

4 Q. And does the gap between the lignite
5 line and the next line up, that's the combined scrubbed
6 coal and other fossil fuel line, does that gap of about
7 35 tetragrams represent the CO(2) combination from
8 scrubbed coal together with a contribution from other
9 fossil fuels such as natural gas and oil?

10 A. Sorry, after that pause, could you
11 repeat your question again?

12 Q. Yes. Does the distance or the gap
13 between the lignite line and the next line up, which I
14 assume is a combination of scrubbed coal and other
15 fossil fuels as you have defined them being natural gas
16 and oil, that gap of about 35 tetragrams, does that
17 represent the contribution to CO(2) from those two
18 sources, the scrubbed coal and the other fossil fuels?

19 A. I believe so, yes.

20 Q. Okay, thank you.

21 Can you tell me why the estimates for
22 CO(2) contributions from scrubbed coal and from other
23 fossil fuels are shown as a combined line after, I
24 think it is about 2010, but by separate lines before
25 2010?

1 A. I think I would like to check on
2 that. Just in looking at this graph, I will let you
3 know what is coming to my mind, and I would suspect
4 that the reason why that line combines in the year 2010
5 I guess, while it's labelled as scrubbed coal with the
6 X, I am really wondering whether that might have been
7 unscrubbed coal. And the reason, if that was
8 unscrubbed coal that would make a little more sense
9 because there would perhaps be no unscrubbed coal units
10 on the system at that time with Lakeview retiring.

11 Q. I suppose that leads me to the next
12 question, the upper line, if I am interpreting the
13 symbols correctly, seems to be a combination of the
14 unscrubbed coal, or show the contribution from
15 unscrubbed coal and when that's all added together,
16 that's the total combination as well from everything,
17 from all the fossil fuels.

18 A. Let me just take a moment here.

19 Q. I think I had better rephrase what I
20 said. It's not very clear.

21 The distance between the middle line and
22 the top line is what I take to be the contribution from
23 unscrubbed coal?

24 [10:13 a.m.]

25 A. That is what the graph as printed is

1 indicating, yes.

2 Q. Yes, fine. And the total after
3 blending, which is the upside down triangle is also the
4 top line but that includes the amount from the bottom
5 of the chart right up to the top; would that be
6 correct?

7 A. That is correct.

8 Q. Now, on that chart, there is a little
9 gap on the upper line between about the years 2010 and
10 2013. And what would that gap represent, or is this
11 just a poor sketching?

12 A. That is the affect of the fuel
13 blending routine where they are adjusting the fuels
14 that may be used in the units in order to meet acid gas
15 emission requirements. And depending on which fuels
16 are being used there may be a change in the emission
17 rate of CO(2).

18 Q. And my last question on these charts
19 involves page 9, the SO(2) emissions chart. On this
20 chart, there are relatively wide gaps between the
21 unscrubbed coal line, that is the diamond line, and the
22 total after blending, which I have assumed to be the
23 total contribution from the bottom of the chart to that
24 diamond line for SO(2) contributions from fossil fuels.

25 In addition to that, between the years

1 about 2010 and 2013, again there is a situation where
2 the diamond line, the unscrubbed coal exceeds the
3 total. Is that the same explanation?

4 A. That is really an effect of the
5 blending routine again. The top line with the diamond
6 is representing the emissions before the blending
7 routine takes place. And then in those years, around
8 2010, the routine is trying to reduce the acid gas
9 emissions, so there is some changes in fuel use and it
10 more dramatically affects the sulphur dioxide emissions
11 that we saw on the other graph that it had a much
12 smaller impact on the carbon dioxide emissions.

13 MR. SNELSON: A. Just to be absolutely
14 clear, both the line with the inverted triangle which
15 is called Total After Blending, and the line with the
16 diamond, which is called Unscrubbed Coal, both of those
17 represent a total of everything underneath.

18 The diamond represents the total,
19 assuming that everything uses the fuel that is
20 specified for that plant as being the normal fuel. And
21 then the blending algorithm looks at the total SO(2)
22 emissions, which are shown in page 9, and may adjust
23 the sulphur contents in the fuels to either raise
24 sulphur content to save money or to lower sulphur
25 content to meet emission requirements. And you can see

1 in that figure that during part of the time period the
2 effect of the blending algorithm in this case, was to
3 raise the sulphur dioxide emissions and in other years,
4 particularly that 2010 to 2012 period, the effect of
5 the blending algorithm was to lower total emissions.

6 Q. Thank you. Now I have some questions
7 based on the original 10.29.5, which is on page 1 of
8 Exhibit 683.61. And these have to do with what Ontario
9 Hydro has described as short comings of dispersed
10 generation. I am not going to go through the entire
11 list. I am only going to do the top item and the last
12 two.

13 And the first item reads:

14 Much of the priority supply options,
15 including Manitoba Purchase, hydraulic
16 program and NUGs in the North could not
17 be incorporated.

18 Could you tell me what you mean by not
19 being able to incorporate the NUG's in the North?

20 A. I think it comes back to the
21 discussion that Dr. Macedo on Panel 7, where he
22 described with different stages of the development of
23 the transmission system, the amounts of additional
24 generation that could be added in different areas of
25 the province without additions to the major

1 inter-regional transmission facilities or with those
2 additions he expected by about 1996 or with those
3 additions that he thought were possible by about the
4 year 2000.

5 The assumption of this case is that only
6 committed into regional transmission facilities are
7 added and so that would limit the ability to be able to
8 take additional generation that would add to those
9 flows. And there could be some implications for
10 non-utility generation.

11 Q. Thank you. Now going down towards
12 the bottom of the page, the second last item reads
13 "such a system..." quote:

14 ...would be more susceptible to
15 sabotage and natural disasters, less
16 ability to transfer energy supply.

17 And my question is, how is it that a
18 disperse system is more susceptible to sabotage and
19 natural disaster?

20 MR. DALZIEL: A. We had an interrogatory
21 response that discussed a few examples of how that
22 might be the case.

23 Q. Do you have a number that you are
24 thinking of?

25 A. I am looking for it. That is

1 interrogatory response 10.29.7.

2 Q. Could we have a number for that,
3 please?

4 THE REGISTRAR: 10.29.7 is .66.

5 ---EXHIBIT NO. 683.66: Interrogatory No. 10.29.7.

6 MRS. MACKESY: Q. Thank you. That
7 appears on page 8 of my interrogatory package.

8 MR. DALZIEL: A. Yes.

9 Q. Now, when you are saying "is more
10 susceptible to sabotage and natural disasters" are you
11 relying on duplicate transmission under a more
12 centralized plan to bring in electricity to different
13 areas in the event of difficulties with either
14 generation or transmission?

15 A. I think one of the things that was
16 being thought of in that context of sabotage or those
17 types of natural disasters that might cause significant
18 outages, is that with the transmission system, and this
19 is what the response to 10.29.7 was pointing out, that
20 you can repair the transmission system or a major
21 transmission system failure more quickly than you may
22 be able to repair more distributed damages in a
23 localized transmission system or even damages to
24 localized generating stations.

25 I guess one of the reasons is that it is

1 generally faster to repair a transmission line than,
2 let's say, if you had more distributed resources then
3 there might be more of a probability that one of those
4 distributed generating stations could be struck by a
5 tornado, for example. And typically, it is much faster
6 to repair a transmission line that has been damaged by
7 a tornado than a generating station that may have been
8 damaged by a tornado.

9 Q. But in a more distributed system, if
10 one generation station is struck, the damage is limited
11 to one area, whereas in a centralized system if a large
12 generating station goes out you have got a large loss
13 of supply.

14 A. The damage in a distributed case to a
15 generating station may be limited to that area, but
16 then if that area is very dependent on that generating
17 station, then it may experience the consequences for a
18 prolonged period time if there is inadequate
19 transmission ability to draw on neighbouring resources
20 on in order to supply the area that was relying on that
21 single generator.

22 Q. If there were few reserves in the
23 distributed system, few generation reserves in the
24 distributed system to take up the slack?

25 A. Then that would compound it.

1 [10:25 a.m.]

2 Q. Going on to the last point in
3 10.29.5, it reads:

4 Less ability to mitigate primary
5 energy disruptions and shortfalls and
6 less ability to deal with changes in
7 primary energy supply availability.

8 Could someone comment on that, please?

9 MR. SNELSON: A. Yes. One example of
10 this type of situation is that local systems tend to be
11 dependent upon the primary energy resource that is most
12 available in that local system.

13 So, for instance, Northern Ontario, most
14 of its generation is hydraulic. And there are
15 hydraulic systems like Manitoba and Quebec and so on,
16 and all those systems have the characteristic that they
17 have to plan very, very carefully for the situation
18 where the rain fall is relatively low and the runoff is
19 low, because it affects a lot of their generation. In
20 actual fact, they provide a lot more generation,
21 particularly in terms of energy reserves, under median
22 conditions just to protect against low water
23 conditions.

24 Whereas, in a fully integrated system
25 such as the one that we have, where we have a mix of

1 hydraulic and thermal resources, then generally
2 speaking there is enough thermal energy that can be
3 produced in Southern Ontario to back up the hydraulic
4 energy in Northern Ontario which is more subject to the
5 local conditions. So that's one example.

6 It also applies to other types of energy
7 resources, too. And that is that there are changes in
8 the price and availability of fuels, and a local system
9 would tend to be dependent upon whatever fuel was most
10 suitable in that area. So, for instance, in the late
11 1960s, early 1970s, oil was the preferred fuel for
12 generation in the eastern area of Lake Ontario,
13 Kingston area I had in mind, because of proximity to
14 the oil refineries in Montreal that produced residual
15 oil at a relatively low price that was available for
16 that area. So the local system tends to depend upon
17 whatever fuel is available in that area.

18 We built a very large oil-fired plant in
19 that area, but if it had been local planning there
20 probably would have been a number of smaller plants
21 build in that area and that would have seemed like good
22 planning at the time.

23 As things actually transpired, residual
24 oil became a very expensive fuel by the end of the 70s
25 and the early 80s, and with a fully integrated system

1 we were then able to change our Lennox system from
2 supplying most of the energy required in the Kingston
3 area, we shut it down for a few years and bought all
4 the energy in that transmission system at about half
5 the cost. Or in the current circumstances we use it as
6 a peaking resource and bring in energy at times other
7 than peak to supply Kingston area.

8 So the flexibility of the major
9 transmission system to cover off changes in the price
10 and availability of fuels so that you can adjust to
11 changing conditions is a very important benefit of the
12 transmission, and it covers for a lot of things that
13 you don't foresee at the time when you are doing your
14 planning, and while we do our best to foresee what can
15 happen, we do know that things change in unexpected
16 ways.

17 Q. Would I take from your reply that
18 diversity is important whether you are in large
19 centralized system or in a smaller dispersed design
20 type of system?

21 A. That is correct. But it's more
22 expensive to provide in a smaller system than a large
23 system because some of the diversity comes naturally in
24 the large system.

25 Q. Okay. Now, I want to deal with a

1 Panel 9 interrogatory that was referred to Panel 10,
2 and this is in my second package of interrogatories, on
3 page 2, and the number of Interrogatory is 9.29.10.

4 Could I have an exhibit number, please.

5 THE REGISTRAR: .67.

6 MRS. MACKESY: Thank you.

7 I shall also be using two other
8 interrogatories in this cross-examination. The first
9 one is on page 5 of the second package and its number
10 is 10.29.3.

11 THE REGISTRAR: .68.

12 MRS. MACKESY: Thank you.

13 And the third one is on page 14, of the
14 package and it's number is 10.29.21.

15 THE REGISTRAR: .69.

16 MRS. MACKESY: Thank you.

17 ---EXHIBIT NO. 683.67: Interrogatory No. 9.20.10.

18 ---EXHIBIT NO. 683.68: Interrogatory No. 10.29.3.

19 ---EXHIBIT NO. 683.69: Interrogatory No. 10.29.21.

20 MRS. MACKESY: Q. Now, please turn to
21 page 2, which is Exhibit 683.67, Interrogatory 9.29.10,
22 and in that I asked why were the proposed nuclear
23 generation sites not placed in major load centres. And
24 the reply was:

25 Sites discussed in the demand/supply

1 planning document were chosen for
2 illustrative purposes only. No sites for
3 proposed new nuclear generating stations
4 have been selected. The selection of
5 sites will depend on a number of criteria
6 one of which is proximity to major load
7 centres.

8 Now, the word "proximity" turns up again
9 in the reply to 10.29.3 on page 5. It is in the second
10 paragraph, about four lines down. I will read the
11 sentence:

12 Examples of generation facilities
13 sited in areas close to major load
14 centres are Lakeview generating station,
15 2,286 megawatts in Mississauga; Pickering
16 GS "A" and "B", 4,124 megawatts in
17 Pickering, and Nanticoke GS 4,336
18 megawatts, near Port Dover and in
19 proximity of London, Kitchener and
20 Waterloo, Cambridge at the Niagara area.

21 And my question is, is the relationship
22 of Port Dover to London, Kitchener and Waterloo an
23 example of what was meant in the preceding
24 Interrogatory 9.9.10, by the phrase "in proximity to
25 major load centres"?

1 MR. SNELSON: A. I think this is a case
2 of there being no absolute definition of proximity and
3 it being a relative question. So I think that in
4 9.29.10, then clearly proximity to major load centres
5 is a factor in select selecting sites. It is not a
6 factor that is a yes or no; it's a factor of degree.

7 Q. You are saying there is no set
8 mileage or kilometre distance?

9 A. That is correct.

10 Q. Thank you.

11 One last question then on that item,
12 would you recognize that some people living in the
13 Nanticoke/Port Dover area might not consider themselves
14 as being in proximity to London and Kitchener?

15 DR. TENNYSON: A. Yes.

16 Q. Now, I would like to ask some
17 questions about the other examples given in 10.29.3 on
18 page 5 of facilities sited close to major load centres.

19 First, with regard to Lakeview, is it
20 correct that your plans do not include life extension
21 for Lakeview and that it is slated for retirement
22 partway through the planning period?

23 MR. SNELSON: A. Yes. It is, however, a
24 potential site for future development and its location
25 within the load would make it advantageous in that

1 respect.

2 Q. What would the size of megawatts of
3 future development be?

4 A. That would be determined at the time
5 that the future development was being proposed and --

6 Q. So it could be small or large?

7 A. It could be small or large.

8 Q. Thank you.

9 Now with regard to Pickering, is it
10 correct that you are plans do not include life
11 extension for Pickering "A" and that it also is slated
12 for retirement partway through the planning period?

13 A. Yes.

14 Q. Has a Pickering "C" been put forward
15 as an illustrative site?

16 A. No, I don't believe there would be
17 space.

18 Q. Okay. And you wouldn't think of
19 buying space?

20 A. I don't know of any proposal to do
21 so.

22 Q. And the interrogatory mentions Keith
23 and Hearn. That's in the next sentence down. I will
24 read that:

25 In the 1950s and 1960s Keith GS near

1 Windsor and Hearn GS in Toronto were
2 examples of generating stations sited in
3 more heavily populated areas.

4 My question is: Are Keith in Windsor and
5 Hearn in Toronto producing electricity for the system
6 now?

7 A. No, they are not generating
8 electricity, though some facilities in those sites are
9 in use, but they are not actually generating
10 electricity.

11 Q. Thank you. Now, on Thursday, Dr.
12 Tennyson, you listed several reasons why you thought
13 Ontario Hydro would have difficulty finding 25
14 generating sites in the greater Metro Toronto area.
15 And my question, and this is to anyone on the panel
16 because I am not sure who can answer it, what type of
17 generation, if any, does Ontario Hydro see as
18 acceptable in urban areas?

19 DR. TENNYSON: A. In answer to the
20 question that was put last week in terms of -- I was
21 talking about difficulties or considerations in a site
22 selection process. We have not established such a site
23 selection process at this point. All considerations
24 would be included and considered.

25 I don't think that I would be prepared to

1 say that any particular type of generation is to be
2 excluded from urban areas, nor rural areas for that
3 matter. I think that an urban/rural continuum is one
4 dimension on which one would look at potential impacts.

5 Q. One of the reasons I believe that you
6 gave last week for difficulty in finding -- or one of
7 the considerations that you gave for difficulty in
8 finding sites within the Greater Metropolitan area was
9 the density of population, which I tend to associate
10 with more urban than rural areas, and I am asking again
11 is there some type of generation that is more
12 appropriate to that type of situation?

13 A. As I said, I would not say that.
14 When I talk about population density I am thinking in
15 terms of in any area, and there can be densely
16 populated areas all over the place.

17 I am thinking in terms of in a site
18 selection process. If you are looking for sites
19 anywhere, one of the things in terms of social impacts,
20 for example, you want to look at is the displacement of
21 people. So that's all I meant in terms of that. That
22 clearly you might be looking at in a more densely
23 populated area more difficulty finding a site where you
24 didn't have to displace as many people or other uses as
25 you might in another area. But it was more an academic

1 discussion.

2 Q. With some very practical implications
3 though.

4 A. Yes.

5 Q. I will ask the question from another
6 approach.

7 Do the planners see all the options which
8 they have put forward for generation as being
9 appropriate for densely populated areas? And I am
10 going to add a supplementary, and if so, why were there
11 no sites selected for nuclear generation on the Lake
12 Ontario shoreline west of Pickering?

13 MR. SNELSON: A. I'm sorry, I missed the
14 start of the last part of the question.

15 Q. The supplementary was, if the
16 planners see all of the options which had been put
17 forward for generation as being appropriate in densely
18 populated areas, why were there no illustrative sites
19 for nuclear generation on the Lake Ontario shoreline
20 west of Pickering?

21 A. Most of the illustrative sites were
22 sites that Ontario Hydro currently owns, and there are
23 space requirements and so on that would make certain
24 sites suitable for certain types of generation. I
25 believe that Darlington and Wesleyville were identified

1 as illustrative sites that were suitable for nuclear
2 generation, they are actually east of Pickering. They
3 are still in areas that have quite substantial
4 populations, so I wouldn't call them a low population
5 density area. But they were sites that Ontario Hydro
6 owns and has been bought for that purpose in the past,
7 so that land is available.

8 [10:40 a.m.]

9 Q. I am thinking of a situation where
10 you might want sites west of Pickering and Toronto as a
11 matter of geographic balance if you were going to site
12 nuclear?

13 A. You do need a very large site for
14 nuclear because of the exclusion radius around the
15 site.

16 Q. Do you see the densely populated
17 areas west of Pickering as being a difficulty in
18 obtaining --

19 A. We have the land available at the two
20 sites east of Pickering.

21 Q. Excuse me, Dr. Tennyson, you were
22 nodding your head. Were you going to say yes to that?

23 DR. TENNYSON: A. No, in answer to what
24 he was saying. There is the land available.

25 Q. There is the land east, but supposing

1 for technical reasons you want something to the west?

2 MR. SNELSON: A. The land requirement is
3 quite large and we did not include those as
4 illustrative sites. Though, as Dr. Tennyson has said,
5 any site selection process will have to look at a full
6 range of possible locations. It won't be restricted to
7 just pieces of land that Ontario Hydro owns.

8 Q. Now to go back to Page 5 of my second
9 package, in 10.29.3. The last half of the second
10 paragraph speaks to transmission. And I will read that
11 section into the transcripts:

12 Transmission facilities that
13 incorporate these generating stations are
14 also located near the population centres.
15 As well, there are a number of inter-area
16 transmission routes that run through
17 populated areas, such as the 500 kV
18 transmission lines on the Parkway belt,
19 right of way, and the Greater Toronto
20 area, the Kingston to Ottawa lines, and
21 the Sudbury to Toronto lines.

22 Now, I have a question about these lines.
23 When routing the transmission to incorporate the
24 generation mentioned in the paragraph, and when routing
25 the inter-area transmission mentioned in the paragraph,

1 did Ontario Hydro try to route the lines through rural
2 and less populated areas rather than through the more
3 heavily populated areas?

4 A. Transmission routing siting is a very
5 large subject in its own right that has, in recent
6 years, when major transmission rights of way have been
7 required, has had major environmental assessments with
8 environmental assessment hearings. For instance, for
9 the 500 kV lines between Kingston and Ottawa there were
10 environmental assessment hearings for that and also for
11 the lines in Southwestern Ontario.

12 A very large number of factor would have
13 been considered in that process and impacts on people
14 would have been one of those factors and population
15 density, as Dr. Tennyson has described, would have been
16 taken into account in that process as something that
17 was considered.

18 DR. TENNYSON: A. I think as we
19 discussed on Panel 7, in terms of the processes that we
20 used for transmission routing, we go through quite a
21 systematic and elaborate process of developing
22 importance to avoid ratings in consultation with the
23 public and with planners and working groups and
24 government consultation, et cetera. In that process,
25 depending on the particular area, certain features the

1 environment are given very high ratings. Those include
2 high priority, high classed agricultural land, as well
3 as, say, units of residential development in terms of
4 trying to locate the facility. We do try to then
5 locate them where there are compatible land uses, but I
6 think you are quite familiar with that process. So I
7 think that all of these things are considered in it.

8 Q. I don't think that answers my
9 question.

10 A. Okay, I tried.

11 Q. I will repeat the question again.

12 When routing the transmission to incorporate the
13 generation mentioned in this paragraph, and when
14 routing the inter-area transmission mentioned in the
15 paragraph, did Ontario Hydro generally try to route the
16 line through rural and less populated areas than,
17 through the more heavily populated areas, is that the
18 net result of what happened?

19 A. I am not familiar with the net
20 result. What I am suggesting is that the process looks
21 at a broad range of factors and does not inherently do
22 one or the other.

23 Q. Depending on what the importance is
24 assigned to the various factors?

25 A. That helps one locate the route, yes.

1 Q. Now, would you please turn to page 14
2 of my package. This is Exhibit 683.69, Interrogatory
3 10.29.21. In it I asked:

4 Was there any measure of social
5 acceptance as related to location of high
6 demand for electricity service. That is
7 was there any measurement of social
8 acceptance in load centres, where load
9 exceeds generation, which measured A)
10 willingness to have new generation
11 located in the load centre; and B)
12 willingness to have the associated
13 transmission located in the load centre.

14 And the reply was:

15 Ontario Hydro has not carried out such
16 research.

17 And my question is, does that answer
18 still hold?

19 A. To my knowledge it does. I am not
20 sure I totally understood the question. In looking at
21 the response to the interrogatory in terms of our
22 discussion today, certainly in the terms of the public
23 feedback program that was done where any centres were
24 held where there were existing stations or where the
25 illustrative sites were mentioned, there were

1 questions, though, in respect to what considerations
2 would be important for siting future supply."

3 So there was an opportunity there to,
4 perhaps, have brought in any considerations or concerns
5 that people had. I think that is documented.

6 Q. But the illustrative sites were not
7 chosen primarily on the basis of being in the major
8 load centres, so the feedback from those areas would
9 not have been included in that analysis?

10 A. That is correct.

11 Q. Now, my next question applies to page
12 3 of the second package. And this is Interrogatory No.
13 9.29.13.

14 THE REGISTRAR: That is .70.

15 ---EXHIBIT 683.70: Interrogatory No. 9.29.13.

16 MRS. MACKESY: .70. Thank you.

17 Q. This again was a question that was
18 referred from Panel 9 to Panel 10. And the question
19 was, in Exhibit 3, the Demand/Supply Plan Report, on
20 page 14-37, column 1, line 24, under the heading
21 Candidate Sites for Nuclear Options, Ontario Hydro
22 describes Bruce "C" as "reasonably close to major load
23 centres."

24 And my question was by what standard is
25 Bruce "C" reasonably close to major load centres?

1 The response was:

2 Bruce "C" is reasonably close to major
3 load centres in Southwestern Ontario.

4 Bruce "C" is also closer to major load
5 centres than the source of electricity
6 for the Manitoba Purchase and is closer
7 than many potential hydroelectric sites
8 in Northern Ontario."

9 My follow up question was what major load
10 centres in Southwestern Ontario did Ontario Hydro have
11 in mind in that answer?

12 MR. SNELSON: A. I don't know that we
13 know specifically, but our view is that it is probably
14 referring to the Kitchener and London areas.

15 Q. And why would one say reasonably?

16 A. Well we had a discussion just a few
17 minutes ago about proximity to major load centres in
18 which I said that proximity was clearly a factor but it
19 wasn't a yes or no factor, it was a question of degree.

20 Clearly Bruce "C" is not completely right
21 adjacent to or in these load centres and whether it's
22 close or far away depends on the scale in which you are
23 measuring these things and it is really a relative type
24 of discussion. And that's what is discussed here.

25 Q. There again there might be a

1 situation where a person living close to Bruce "C"
2 might not consider themselves reasonably close to
3 Kitchener?

4 A. Yes, that's correct.

5 Q. Now, Mr. Dalziel, on Thursday you
6 mentioned Undertaking No. 442.13 and I have a question
7 based on that.

8 This would be on the second page after
9 the cover title. And near the top of the page there is
10 a number 4 and beside that Southwestern Ontario. Have
11 you located that?

12 Now, according to the title page or cover
13 page, this undertaking reply was filed April the 16th,
14 1992. On this second page with the heading
15 Southwestern Ontario, at the end of the Southwestern
16 Ontario section, under the time frame after 2000, it
17 reads Inter-area Transmission Plans Under Development.
18 And my question is, are those plans available to the
19 public yet?

20 MR. DALZIEL: A. Not that I am aware of.
21 I think the statement is still current and accurate
22 today.

23 Q. Now, before I move on to questions
24 about approvals, I have one general question about
25 planning. In system planning, can a number of small

1 reasons, none of which on it's own would justify a
2 particular plan or project, make that plan or project
3 look worthwhile when taken in combination together?

4 MR. SNELSON: A. It is a very, very
5 general question.

6 Q. Yes it is?

7 A. And one would hesitate to answer it
8 in quite at that generality. Presumably it is possible
9 for a lot of small benefits to add up to making a plan
10 advantageous.

11 Q. Thank you. Now, my next questions
12 have to do with approvals. And please turn to page 17
13 of my second package.

14 [10:50 a.m.]

15 This is Interrogatory No. 11.29.2.

16 THE REGISTRAR: .71.

17 ---EXHIBIT NO. 683.71: Interrogatory No. 11.29.2.

18 MRS. MACKESY: Thank you.

19 Q. In this interrogatory I said:

20 At an Ontario Hydro information centre
21 in Walkerton in March of 1990, I was told
22 to the best of my recollection that, (A),
23 this hearing is just to get approval for
24 the five-year action plan portion of the
25 25-year plan, and that (B), because the

1 forecast could be different five years
2 after 1990 than it was in 1990, need,
3 based on the new forecast, would be an
4 issue of the project-specific hearings.
5 I asked if that Ontario Hydro confirm (A)
6 and (B).

7 The response reads:

8 Please see page 32 of the Update
9 document, Exhibit 452, for a discussion
10 of the five-year period in relation to
11 defining the approvals requested.

12 Applications beyond the five-year period
13 would require consideration of need.

14 My questions apply to the last sentence.

15 Now, would this mean that an application
16 filed after five-year period would require
17 consideration of need as it has been discussed at this
18 DSP hearing?

19 MR. B. CAMPBELL: I think the
20 requirements for any particular application at that
21 time, Mrs. Mackesy, would depend, of course, on the
22 exact legislative requirements at that time. As you
23 are aware, there are some changes being contemplated to
24 the legislation. But I think it's generally fair to
25 say that currently as a matter of legal import of the

1 application here, that it does relate to, or as you
2 have heard, the approvals requested do relate to those
3 items for which an environmental assessment is expected
4 to be filed within five years. If that method of
5 coming up with a figure is accepted by this Board, then
6 as a matter of law that would be the effect of this
7 approval. But of course, as has been clear in these
8 hearings, I think there are intervenors in these
9 proceedings who may wish to take a somewhat different
10 view of that matter.

11 MRS. MACKESY: Thank you.

12 Q. Mr. Snelson, this refers to some of
13 your testimony under cross-examination where I believe
14 you mentioned that in the context of getting early
15 approvals, which you might not use immediately, that
16 Ontario Hydro has to get an Order in Council before
17 construction begins; is that correct?

18 MR. SNELSON: A. Well, this also may
19 have legal implications, but there is a requirement, as
20 I understand it, for Order in Council for many
21 activities that Ontario Hydro wants to undertake, such
22 as to borrow money to start proceedings for a major
23 construction project of any description, and that
24 applies whether or not we have got approvals early or
25 late. That is part of the process of getting a project

1 under way.

2 Q. I will try the next question but I am
3 not sure whether it's suitable.

4 Is there any provision for public comment
5 to the government regarding a request to obtain funds
6 to go ahead with the project?

7 MR. B. CAMPBELL: Mr. Chairman, I am not
8 aware of any provision in the Power Corporation Act
9 that requires a particular public process for the act
10 of issuing that Order in Council.

11 The Environmental Assessment Act,
12 however, places restrictions on what the government can
13 do until the appropriate process has been followed
14 under the Environmental Assessment Act, and that
15 certainly does contemplate -- certainly Ontario Hydro's
16 way of doing environmental assessments contemplates
17 public involvement as everyone here will have heard.

18 But I think as a pure matter of law,
19 there is no particular process requirement set out for
20 that Order in Council in the Power Corporation Act.

21 MRS. MACKESY: Thank you.

22 Q. Now my next question relates to
23 non-utility generation and transmission and
24 environmental assessments and hearing processes.

25 Does the exclusion of non-utility

1 generation and transmission from the environmental
2 assessment and hearing process make NUGs look more
3 attractive to Ontario Hydro as a source of filling
4 electricity supply?

5 MR. SNELSON: A. When we are assessing
6 the attractiveness of non-utility generation then we
7 have to look at all of its characteristics under the
8 both technical and administrative, and one of its
9 characteristics is a relatively short lead time. And
10 if there were to be requirements for public hearing
11 processes or so on for non-utility generation that
12 greatly extended the times that were expected, then
13 that would tend to reduce that particular aspect of
14 attractiveness.

15 Q. Thank you.

16 A. As you know, some types of
17 non-utility generation, non-utility generation can be
18 designated under the Act, as I understand it, and that
19 it is expected that, for instance, municipal waste
20 burning non-utility generation would likely have
21 hearings under the Environmental Assessment Act.

22 Q. You have mentioned municipal waste
23 facilities, can you comment on whether transmission
24 associated with NUGs is being contemplated?

25 A. Not that I am aware of.

1 Q. Thank you.

2 My next questions are generally on
3 environmental assessment and hearing process.

4 Would you agree that the environmental
5 hearing process is a way to put on the open record why
6 Ontario Hydro has made the choices it has?

7 A. Yes, I think that's our view, that is
8 one of its characteristics.

9 Q. Would you agree that the
10 environmental hearing process is a way for those who
11 have doubts about your explanations to question your
12 explanations in an open recorded manner?

13 A. Yes.

14 Q. And would you agree that measures
15 that shorten the hearing process in some instances or
16 eliminate it in others prevent those who have doubts
17 about the explanations from questioning them in an open
18 recorded manner?

19 A. Not necessarily. We think that maybe
20 it is possible to have adequate time for objections to
21 be raised and that that's not inconsistent with a
22 relatively short hearing process.

23 Q. How would people who were concerned
24 be able to have questions put on the record, have them
25 answered by Ontario Hydro without the hearing process?

1 A. I didn't say without the hearing
2 process, I said with a shorter hearing processes.

3 Q. And you think a shorter hearing
4 process would not affect...

5 A. It is necessary to find a balance
6 between an efficient process that provides adequate
7 opportunity for all the views that are necessary to be
8 heard to be heard, and to find a balance between that
9 and being able to make decisions in a timely matter to
10 respond to changing circumstances. So there is a
11 balancing that is necessary in this type of
12 consideration.

13 Q. My final question on this section is,
14 would you agree that measures that involve
15 behind-the-scene agreements can limit the ability of
16 those who feel harmed by the agreement to understand
17 and question?

18 MR. B. CAMPBELL: I take it, Mr.
19 Chairman, that this is some -- this is a form of
20 hypothetical. It's not suggested that that's
21 happening, but if there were such things.

22 MRS. MACKESY: Yes, yes.

23 MR. SNELSON: It is hard to answer
24 without knowing what sort of...

25 THE CHAIRMAN: I am not sure exactly what

1 you mean by behind-the-scenes agreement. An agreement
2 that is not made public, is that what you are saying?

3 MRS. MACKESY: Yes, or the full details,
4 the full process in working towards that agreement is
5 not made public. The final outcome may be, but the
6 trade offs that went into it before the agreement was
7 reached may not be made public.

8 MR. SNELSON: As I said, it's very
9 difficult to answer as a hypothetical question.

10 MR. B. CAMPBELL: Mr. Chairman, if Mrs.
11 Mackesy is moving on, again the Panel may not be aware
12 of it, but in circumstances under the Environmental
13 Assessment Act even where a hearing is not held, there
14 are a variety of mechanisms and public records created
15 that Mrs. Mackesy may or may not be aware of, I assume
16 from her questions that she is not, but that do ensure
17 that there is some public discussion. This may be a
18 matter, if it's of interest to her, she may wish to
19 pursue with the government, but I didn't want to leave
20 her with the impression that there is no space between
21 no public discussion and a full EA hearing.

22 If I am saying too much, I will sit down.

23 MRS. MACKESY: Thank you.

24 Q. Now, Dr. Tennyson, in your evidence
25 you have spoken of the distribution of risk and benefit

1 as being one of the social considerations you take into
2 consideration in planning. And I take it that that
3 consideration is outlined briefly in Exhibit 4, at the
4 bottom of 5-3. I will read that portion into the
5 transcripts. It's in column 3 at the bottom of page
6 3-5 in Exhibit 4, under the reading Distribution of
7 Risks and Benefits it reads:

8 This criterion will consider the
9 distribution of benefits and risks of the
10 alternative plans among population
11 groups, regions and generations.

12 Generally it is preferable that those who
13 bear the risks also share equitably in
14 the benefits.

15 Is that what you were referring to, Dr.

16 Tennyson?

17 DR. TENNYSON: A. Yes.

18 Q. Thank you.

19 Now, I spent some time on Panels 2 and 3
20 asking questions about this extract and about a
21 different approach to the matter of equity, and at that
22 time I suggested that those who get the benefits of the
23 electricity should take the drawbacks of producing and
24 delivering that electricity, rather than imposing those
25 drawbacks on other areas, and by this I meant that

1 generation should be located in the major load centres
2 where the need is in order to avoid some of the impacts
3 of transmission lines on rural areas that don't need
4 more generation.

5 Now, would you please turn to page 16 of
6 my second interrogatory package. This is Interrogatory
7 11.29.1.

8 THE REGISTRAR: .72.

9 ---EXHIBIT NO. 683.72: Interrogatory No. 11.29.1.

10 MRS. MACKESY: Thank you.

11 Q. In it I outlined the idea of
12 generating power in areas where it was used so that
13 those who get the benefit of the power absorb the
14 burden of the negative impacts of transmission and
15 generation. And I asked: Does Ontario Hydro address
16 this matter anywhere in the environmental assessment,
17 and as follow up question, if not, why not.

18 And the response reads:

19 In the environmental analysis Exhibit
20 4, this issue in assessment was
21 identified. However, it is at the
22 project-specific stage when potential
23 negative and positive impacts are
24 identified and evaluated, appropriate
25 impact measures developed and the balance

1 of net impacts determined. This is part
2 of the formal environmental assessment
3 submission for the project.

4 And Dr. Tennyson, first, could you point
5 out in Exhibit 4 where the issue, as I put it, was
6 identified?

7 DR. TENNYSON: A. Well, I am assuming
8 that the issue they are talking is as in your question,
9 the distribution of risks and benefits; is that
10 correct?

11 Q. I was thinking of it from the point
12 of view I wrote, generating power in the areas where it
13 is used?

14 A. I don't think that's the way the
15 question was answered.

16 Q. Okay. The answer applies to the way
17 the issue was put on page 3-5?

18 A. Well, that's what I am assuming it
19 is.

20 Q. Okay. And so the follow up to that,
21 the balance of the answer also applies to the --

22 A. I think, the way it reads to me,
23 anyway, that the question of the distribution of risks
24 and benefits, it is felt applies to even the question
25 that you are asking, and that it's at that point, at

1 the project-specific stage that that kind of trade off
2 in terms of who bears the risks and who gets the
3 benefits is addressed.

4 Q. I see. Now my next question then is
5 why is this matter not also considered at the plan
6 stage?

7 A. Because in order to understand that,
8 we believe that that's more appropriately addressed at
9 the project and site-specific stage.

10 Q. The follow up question, again, might
11 not decisions be made at the plan stage that determines
12 some options to be acceptable even though it turns out
13 later on they are not acceptable in major load centres?

14 A. I wouldn't argue that I think that we
15 did try to look at the social acceptance of various
16 options and that's one issue. And then a different
17 issue to be addressed at the site-specific stage is in
18 that particular locale. What is appropriate.

19 Q. If urban areas were faced with having
20 to live with the draw backs of their electricity use
21 demands, do you think there might be faster progress
22 towards developing forms of electricity generation and
23 delivery that were more socially acceptable in urban
24 areas?

25 A. I find that the question difficult to

1 answer. I think that many of the options are certainly
2 as applicable to urban areas as to anywhere else. If
3 you look at a lot of the non-utility generation right
4 now that would come from cogen, those are urban areas,
5 they may be in the North but to me they are urban
6 areas.

7 Certainly there is hydraulic in urban
8 areas. Demand management is something that -- some of
9 the programs clearly that are geared to residences and
10 large commercial sort of centres would be, and are,
11 very acceptable. So, if I am missing something here --

12 Q. No, I don't think you are. Would you
13 like to comment on all the other options that we have
14 mentioned, cogen and hydraulic, and demand management?

15 A. Well, I think I spoke to these, what
16 I would consider to be the social acceptance or what
17 the public has been telling us in terms of the Feedback
18 Program. And there are concerns about certain options,
19 but once again, I don't think it necessarily precludes
20 one area or another.

21 Q. Thank you.

22 Would the panel agree that care for the
23 environment is the responsibility of all the
24 electricity users in Ontario, not just the people whose
25 particular environment is harmed by a project that's

1 said to be in the interest of the environment of
2 Ontario as a whole?

3 MS. HOWES: A. Yes, I would agree with
4 you.

5 Q. Thank you. I think I will leave it
6 at that. Those are my questions.

7 THE CHAIRMAN: Thank you, Mrs. Mackesy.
8 Mr. Power, are you next?

9 MR. POWER: I believe I am, Mr. Chairman
10 Is it possible for five minute break?

11 THE CHAIRMAN: We will take the break.
12 We will take a 15-minute break.

13 THE REGISTRAR: Please come to order.
14 This hearing will recess for 15 minutes.

15 ---Recess at 11:15 a.m.

16 ---On resuming at 11:35 a.m.

17 THE REGISTRAR: Please come to order.
18 This hearing is now again in session. Please be
19 seated.

20 MR. DALZIEL: Mr. Chairman, if I could,
21 Mrs. Mackesy was asking a question earlier this morning
22 with respect to a figure on carbon dioxide emissions in
23 that Supplementary Interrogatory Response 10.29.5. If
24 I could just clarify that the scrubbed coal component
25 does reduce to zero in the year 2010. That is because

1 scrubbed coal units are retired in this planning case.

2 What I was forgetting earlier is that
3 this case was one of our planning questions before we
4 were applying a lot of scrubbed acid gas emission
5 controls to the existing system.

6 So not all of the Lambton and Nanticoke
7 units were receiving acid gas emission controls and the
8 result is then that in this case the scrubbed coal
9 component does indeed reduce to zero by the year 2010.
10 So the figure is correct as presented.

11 THE CHAIRMAN: Mr. Power.

12 MR. POWER: Thank you, Mr. Chairman. If
13 I may I would like to enter some documents as exhibits.
14 I believe you have in front of you a document entitled:
15 Transcript Undertaking from Panel 8. And on the second
16 page it is noted Undertaking 478.29. And then the four
17 other documents are supplementals to that undertaking.
18 I would like to enter the supplementals first because
19 they are the chronological background prior to the
20 actual 478.29.

21 The first document would be entitled, it
22 is an Ontario Hydro document: Design and Development
23 Division, Generation Heat Supply from Darlington NGS,
24 and it is a document dated September, 1983. If I could
25 have an exhibit number for that please.

1 THE REGISTRAR: 724.

2 ---EXHIBIT NO. 724: Design and Development Division,
3 Generation Heat Supply from Darlington
NGS, dated September, 1983.

4 MR. POWER: The second document is
5 entitled: Darlington Heat Utilization Study, it is by
6 Inducon Consultants of Canada Limited. If I could have
7 an exhibit number for that.

8 THE REGISTRAR: 725.

9 ---EXHIBIT NO. 725: Darlington Heat Utilization by
10 Inducon Consultants of Canada Limited.

11 MR. POWER: The next one is an Ontario
12 Hydro memorandum, dated July 23, 1985.

13 THE REGISTRAR: 726.

14 ---EXHIBIT NO. 726: Ontario Hydro memorandum, dated
15 July 23, 1985.

16 THE CHAIRMAN: It might be the same one
17 for July 25, 1985.

18 MR. POWER: That would be the next
19 document. You should have one in front of you, Mr.
20 Chairman, dated July 23rd, as well as July 25.

21 THE CHAIRMAN: I do, I'm sorry.

22 MR. POWER: July 23rd is 726. Therefore,
23 the July 25th, 1985, would be Exhibit 727.

24 THE REGISTRAR: 727.

25

1 ---EXHIBIT NO. 727: Ontario Hydro memorandum dated
2 July 25, 1985.

3 MR. POWER: And finally, Mr. Chairman,
4 the actual Undertaking 478.29 which is entitled:
5 Darlington Energy Park, Energy Extraction Delivery
6 System. If that could be made an exhibit as well.

7 THE REGISTRAR: 728.

8 ---EXHIBIT NO. 728: Undertaking 478.29 entitled:
9 Darlington Energy Park, Energy Extraction
 Delivery System.

10 THE CHAIRMAN: It is already part of the
11 evidence of the hearing. Every Undertaking response is
12 considered to be part of the evidence.

13 MR. POWER: Thank you, Mr. Chairman.

14 CROSS-EXAMINATION BY MR. POWER:

15 Q. Mr. Snelson, I would like to begin by
16 asking a few questions which arise out of these five
17 documents. And I am trying to determine the basis for
18 some of the statements made in the documents which lead
19 up to the last document.

20 Just by way of background, I note that
21 the first document, Exhibit 724, which is dated
22 September of 1983, identifies utility cogeneration as
23 an opportunity for Hydro, at least at Darlington. It
24 makes reference in it, page 2 of the introduction, to
25 the hiring of a consultant to determine the economic

1 potential of utility cogeneration. I am actually not
2 worried about that document. That is the background.
3 It is the second, larger document, Exhibit 725.

4 This report itself is not dated.
5 However, it contains, right on the first two pages, an
6 introductory letter dated September 27, 1984, to the
7 chairman of the sub-committee on heat utilization.

8 I have a question with respect to a
9 statement on page 2 of that letter. On that page the
10 first and second paragraphs address the need for market
11 research. The first paragraph notes that while the
12 original terms of reference for the report included a
13 market research component, the market research
14 component was postponed due to a new initiative, which
15 I take from a previous paragraph, would be the new
16 business ventures division at the time.

17 My question for you, sir, is do you know
18 whether the market research component referred to in
19 these terms of reference were ever completed?

20 MR. SNELSON: A. I believe you have had
21 referred to you some of the materials from the new
22 business ventures division. But specifically in answer
23 to your question, I don't know whether a specific
24 market research was undertaken for the use of heat from
25 Darlington in the Darlington area. I think actually it

1 is quite likely that such a study was not done on a
2 large scale, because of the very rapid drop in gas
3 prices that occurred in the mid-1980s and has continued
4 to this day, which has greatly reduced the
5 attractiveness of such schemes to industry and so the
6 need for market research has greatly reduced.

7 Q. Can I take it then, from your
8 statement, that Hydro has not studied or undertaken the
9 market research component referred to here, or do you
10 wish to undertake to find out?

11 A. I believe on Panel 2 I gave an
12 undertaking to determine what studies had been done for
13 the use of the heat from existing generating stations,
14 and that we provided all the information we had
15 available at the time in answer to that undertaking.

16 Q. There is nothing in that undertaking?
17 Thank you.

18 That same paragraph at the top of Page 2,
19 then also refers to actual market testing. I haven't
20 seemed to come across that either. Do you know whether
21 this was actually a study completed at the time?

22 A. I don't know, I suspect that nothing
23 very large has happened for the reasons I have
24 enumerated previously.

25 Q. All right, thank you, Mr. Snelson.

1 If I may, then, turn to Exhibit 728, Mr. Snelson, the
2 Darlington Energy Park Study. This document appears to
3 be inaccurately numbered. There is the top page and it
4 begins with page 6. I am going to advise that should
5 be page 1, but for reasons unknown it begins on page 6.

6 The second full paragraph from the bottom
7 refers to activities and studies in regard to the
8 utilization of a low grade heat at Pickering and Bruce
9 found limited application for hot water.

10 Do you know what those activities and
11 studies are, Mr. Snelson? Or can we assume, based on
12 your earlier statement that they would have been
13 provided earlier?

14 A. As you know, we are marketing heat at
15 Bruce and from the Bruce energy centre. This answer
16 indicates that there has been greenhouses and I believe
17 the green houses are located at Bruce. But there are
18 also aquaculture facilities at Pickering.

19 MS. HOWES: A. I am also aware that
20 there was an environmental assessment for the Bruce
21 energy centre and that may well be the one of the
22 studies that was referred to.

23 In addition, there has been work under
24 way at Bruce "A" to look at a heat recovery discovery
25 system from the power house at Bruce "A" to heat

1 adjacent buildings. And that work has been under way
2 and there is an expectation that there will be a saving
3 of about one megawatt.

4 Q. That study is presently under way?

5 A. No, it has been completed.

6 Q. It has been completed. Is it
7 possible that I could receive a copy of that, please?

8 A. I have no idea what documentation
9 there is. All I know is what the results are.

10 Q. Well, perhaps I can leave it as this.
11 Could I please have a statement as to what the
12 activities and the studies are in this document? If
13 you could undertake to provide a general statement?

14 A. Can I just clarify, you would like
15 the Bruce energy centre environmental assessment or
16 what are you referring to?

17 Q. No, I don't think I need the
18 environmental assessment. I am truly just trying to
19 find out what was the rationale at the time that the
20 document was written for excluding hot water in that
21 statement. It just states activities and studies, but
22 it doesn't go on to give any further detail.
23 I was just wondering --

24 MR. B. CAMPBELL: I don't think anyone on
25 the panel can deal with this in any detail. I can

1 undertake to make an inquiry as to what the conclusion
2 is based on, with respect to hot water, providing it
3 doesn't turn out to be a huge amount of work; in which
4 case, I will have to go back into files and so on. In
5 which case, I will get back to my friend and we will
6 have to take it from there.

7 MR. POWER: Thank you, Mr. Campbell.

8 MR. CHAIRMAN: Can we have a number for
9 that?

10 THE REGISTRAR: 684.37.

11 ---UNDERTAKING NO. 684.37: Ontario Hydro undertakes
12 to make an inquiry as to what the
13 conclusion was based on in the Darlington
Energy Park Study, with respect to hot
water.

14 MR. POWER: Q. And back on the
15 executive summary page, there is also a reference or a
16 statement that the recovery of the capital cost through
17 revenues from steam sales are impractical due to the
18 forecasted low cost of natural gas. I guess this
19 follows up in your commentary, Mr. Snelson.

20 [11:45 a.m.]

21 Do you know if there was a study at the
22 time which was undertaken which analyzed the impact of
23 natural gas on steam sales or was this just an internal
24 prediction?

25 MR. SNELSON: A. I believe it's probably

1 an internal prediction, but also based upon the
2 experience in dealing with the Bruce energy centre and
3 the pricing of steam for that energy centre and how it
4 had to be priced relative to natural gas to encourage
5 industry to move to that energy centre.

6 Q. Thank you, Mr. Snelson.

7 My final question regarding these
8 documents relates to the first document that we had a
9 look at, Exhibit 724. At the back of that document
10 there are attached three Ontario Hydro memos, there are
11 approximately eight pages... approximately eight pages
12 back from the end of the materials is a memo dated
13 August 16th, 1993. I would like to refer you to page 2
14 of that memo. There are a number of paragraphs on the
15 back of page 2, and I refer to you No. 7, and there is
16 a statement that:

17 The Corporation's position is at the
18 moment to concentrate its marketing
19 effort on the Bruce energy centre. The
20 marketing of Darlington or any other
21 station would be reactivate, i.e., we
22 will respond to direct inquiries or
23 pursue other sites as they fall out of
24 the effort at Bruce.

25 Do you know if this is still the policy

1 of Ontario Hydro?

2 A. As we have said, the marketing of
3 heat energy is an activity which is part of the new
4 business ventures division's mandate, and I believe
5 that their overall policy is to pursue heat sales where
6 they consider there to be an economic advantage to
7 doing so and an opportunity.

8 I think the current position is that such
9 that with the low natural gas prices at this time, then
10 the opportunities to do that are very, very limited.

11 Q. So if I understand you correctly, the
12 present policy is to pursue these opportunities where
13 it's economic to do so from Hydro's point of view?

14 A. It is to pursue such sales, but
15 realistically you can only do so in cases where there
16 is a good chance of having an economic situation.

17 Q. So the activities of new business
18 ventures, if I understand you then, they will not
19 pursue potential sales unless they feel there is an
20 economic component, they feel they recognize it first,
21 they identified an economic opportunity.

22 Their activities are based on their
23 identifying an economic activity and pursuing it?

24 A. I think it is part of their overall
25 management of their business, they put their resources

1 into areas where they think they have the best chances
2 of having some success.

3 Heat sales is an area that they set out
4 to pursue quite aggressively in the very early time of
5 their formation when the opportunity appeared to be
6 reasonably attractive. And with the low natural gas
7 prices and the prolonged situation with low natural gas
8 prices, then realistically there is much less
9 likelihood of finding economic applications at this
10 time.

11 Q. You are agree with me, though, that
12 there are some factors where it is economic for Ontario
13 Hydro to sell thermal energy.

14 A. Yes, I believe there are some.

15 Q. Do you know what those circumstances
16 are?

17 A. Not in detail.

18 Q. Is there a study undertaken by
19 Ontario Hydro which identifies those circumstances?

20 A. We have discussed the Bruce energy
21 centre and that is a case where heat is being offered
22 from Ontario Hydro's services.

23 Q. Other than the Bruce, do you know
24 whether Ontario Hydro has undertaken a study to
25 determine the range of circumstances for thermal energy

1 sales in Ontario as a whole?

2 A. Not to my knowledge in recent years.

3 As I have indicated, low natural gas prices do really
4 rule these things out at this time.

5 Q. So there is an assumption that
6 natural gas prices has reduced the circumstances but
7 there is not a study indicating what the circumstances
8 are?

9 A. I don't believe it's an assumption.
10 I believe it's based upon solid experience of having
11 been in the energy business for many years, having the
12 experience at the Bruce energy centre, having
13 experience of being active at marketing heat energy
14 from our existing stations during the period when
15 natural gas prices were higher, and it is the
16 accumulation of all that experience that leads to the
17 current view.

18 Q. And that experience hasn't been put
19 down in a document somewhere, I take it?

20 A. Not to my knowledge.

21 Q. Thank you.

22 MR. B. CAMPBELL: I'm sorry, I assume in
23 that question, Mr. Power, that you are saying that is
24 over and above the documents that have already been
25 provided to you?

1 MR. POWER: Yes, Mr. Campbell.

2 Q. Some more general questions, Mr.

3 Snelson. For the purposes of preparing the Update, I
4 think you will agree with me utility cogeneration was
5 not considered as a means of reducing electricity
6 demand?

7 MR. SNELSON: A. Utility cogeneration is
8 not very likely to reduce electricity demand and it was
9 not considered to be an alternative. The circumstances
10 that led to the Update were ones that, if anything,
11 were based upon lower natural gas prices than were
12 previously expected, and for the reasons I mentioned
13 cogeneration, utility cogeneration looked less
14 attractive.

15 Q. I am starting to believe that Hydro's
16 sole position on utility cogeneration is based on
17 natural gas prices.

18 A. No. But the fact is that when
19 decisions are being made by industry as to what source
20 of relatively low grade heat they need for their
21 processes, then natural gas is the usual, most likely
22 competitor to heat from an electricity generating plant
23 by utility cogeneration, and the lower the price for
24 natural gas, then the less the market value of the
25 steam, and the less the likelihood that industry would

1 wish to change its location to be adjacent to an
2 electricity generating plant for the purpose of having
3 low cost steam.

4 Q. Would you say natural gas prices are
5 the primary competitive point then with utility
6 generation -- thermal energy sales, sorry?

7 A. It is a very good reference point and
8 it is the largest competitor at this time.

9 Q. I think you will agree with me, Mr.
10 Snelson, that Ontario Hydro has not undertaken a study
11 to determine what the existing market is in, let's say,
12 1992 for thermal energy sales in Ontario for utility
13 cogeneration or in the future?

14 A. As I have indicated, we were quite
15 active in the field some years ago, and the market
16 factors are such that it is clear that there is less
17 market now than there was then.

18 MR. POWER: Thank you, Mr. Chairman,
19 those are all my questions.

20 THE CHAIRMAN: Thank you, Mr. Power.

21 Mr. Moran, are you next?

22 MR. MORAN: Yes, Mr. Chairman.

23 Mr. Chairman, I don't anticipate taking
24 much longer than 10 or 15 minutes also.

25 I understand that there is a big lunch

1 planned for the panel.

2 MR. B. CAMPBELL: No, no.

3 ---Off the record discussion.

4 CROSS-EXAMINATION BY MR. MORAN:

5 Q. Maybe I will start by directing my
6 questions to you, Mr. Shalaby, we are now at the end of
7 Hydro's case, and I think there is about one more
8 person who will be interested in asking you questions,
9 as I understand it, and I just want to take you through
10 a very broad overview of what it is you have placed
11 before the Board.

12 You have got an economic forecast that
13 looks at a 25-year period and has to be redone
14 annually, so essentially that in itself is a variable;
15 isn't it?

16 MR. SHALABY: A. Yes.

17 Q. And because it has to be redone
18 annually there is a certain amount of uncertainty
19 associated with your economic forecasting which you
20 discussed at length previously?

21 A. Yes.

22 Q. And the same thing applies to your
23 demand forecast, it has to be redone annually and the
24 same kind of uncertainties associated with that too,
25 isn't that right?

1 A. That's correct.

2 Q. Now, you have set a target for demand
3 management, 5,200 megawatts by the year 2000, 9,860 by
4 the year 2014. These are targets, and as I understand
5 it, these are not maximum or minimums; isn't that
6 correct. They are simply just targets?

7 A. They are pretty close to the
8 maximums, but describing them as targets is a good
9 description, yes.

10 Q. And so essentially these are also
11 variables, aren't they?

12 A. They are.

13 Q. Even within this target there are
14 variables, you have estimated about 1,500 megawatts by
15 the year 2000 from fuel switching, and that's going to
16 be a variable; right?

17 A. Variable in the sense of it depends
18 what the target markets will be, the alternative fuels
19 that we will be switching to and so on, yes.

20 Q. And also within the demand management
21 target, mandation has been identified as contributing
22 about 1,200 megawatts by the year 2000, but that's also
23 a variable; isn't it?

24 A. It has uncertainties associated with
25 it, yes.

1 Q. You have set a target for non-utility
2 generation as well, 3,100 megawatts by the year 2000,
3 4,200 megawatts by the year 2014, basically you are
4 treating this as a strategic reserve, as I understand
5 it; is that correct?

6 A. It's a major component of the
7 integrated plans and amounts in addition to what we are
8 showing perhaps could be classified as strategic
9 reserve. There is more to be had if we need more.

10 Q. It essentially is a variable as well.

11 A. There has uncertainty associated with
12 it, yes.

13 Q. And depending on the circumstances
14 you will vary that up or down depending on availability
15 also?

16 A. Yes.

17 Q. You are seeking approval relating to
18 about 1,400 to 1,800 megawatts of hydroelectric
19 generation, but that is a variable also because you
20 need to get site-specific approvals and there is some
21 risk that you might not get all of those approvals;
22 right?

23 A. That risk exists, yes.

24 Q. In addition there is a process that's
25 under way, at least in the Moose River Basin area, that

1 is looking at a decision-making process that is
2 somewhat larger than what the Environmental Assessment
3 Board is looking at.

4 Perhaps, Dr. Tennyson, you could comment
5 on that?

6 A. You are referring to the co-planning
7 process, the sites beyond what we are --

8 Q. Right. And including Mattagami also.

9 A. There is a planning process yet to be
10 fully defined, yes.

11 Q. To move on then, you have also
12 expanded the life extension program relating to fossil
13 fuel stations, but that's essentially a variable too
14 because it depends on the physical condition of those
15 plants and the economics of extending them past their
16 plan life; right?

17 A. Yes.

18 Q. It also depends on trends and
19 emission controls as well, which are outside of Hydro's
20 control?

21 A. It depends on a whole host of factors
22 that we discussed in detail, yes.

23 Q. Even the Manitoba Purchase itself is
24 a variable in part because of the site-specific
25 approval that's required and also because of the

1 possibility of additional power purchases during the
2 course of the contract; right?

3 MR. SNELSON: A. Well, I think that the
4 possibility of additional power purchases during the
5 contract is a separate issue. But the contract is a
6 specified size but there are uncertainties regarding
7 the approvals through this process and approvals in
8 Manitoba which, while not directly part of the
9 purchase, may have some influence.

10 Q. And there is also federal approvals
11 involved as well; right?

12 A. I believe so.

13 Q. All of these things are variables.
14 If we were to look at a constant that runs through all
15 of these variables, these basically would be your
16 strategic priority directions; right, Mr. Shalaby?

17 MR. SHALABY: A. That has stayed more
18 stable than many other components of the plan, yes.

19 Q. So you have taken all of these
20 variables, you have integrated them into a particular
21 balance, that's the kind of things we saw happening in
22 Plan 15 and the other plans and also in the Update, and
23 basically, what you want the Board to do is agree with
24 the particular balance you have struck; isn't that the
25 heart of the matter?

1 MR. SNELSON: A. We are asking for
2 specific approvals with respect to hydroelectric
3 generation and incorporating transmission, and
4 transmission associated with the Manitoba Purchase, and
5 in considering whether those approvals are appropriate,
6 then we expect that the Board will be looking at the
7 overall balance of the plan and the other components of
8 the plan.

9 Q. Primarily because every component in
10 the plan is a variable; right?

11 A. Because all of the plan is
12 inter-related, primarily.

13 Q. And because every part that's
14 inter-related is a variable?

15 A. All forecasts of the future have some
16 element of variability.

17 Q. All right. Now, in addition to the
18 strategic priority directions, flexibility is something
19 that you give a high value to; isn't that correct?

20 A. We believe flexibility is important.

21 Q. And this is borne out in particular
22 by the circumstances that led to the Update. You
23 started at the beginning of this hearing predicting a
24 steady growth in demand and we are now looking at a
25 situation where there is going to be a sizable surplus

1 to manage. That basically underlies the requirement
2 for flexibility; right?

3 A. We are still forecasting about the
4 same growth in basic load that we were forecasting at
5 the start this process. The potential surplus is more
6 a question of the higher targets or some of the
7 preferred ways of either reducing demand or increasing
8 supply.

9 Q. The growth pattern itself is also a
10 variable; isn't it?

11 A. The growth pattern is also a
12 variable, yes.

13 Q. So it follows that if flexibility is
14 important, and all of the variables that you have
15 discussed aren't ones that necessarily should be fixed
16 in stone by this Board in its decision, right, it is
17 important to recognize the fact that these are
18 variables and flexibility is important. Isn't that
19 going to be an important part of the approval?

20 A. I think when considering the
21 approvals that we requested, the Board would be
22 considering not only the central estimates of all
23 elements but also the uncertainties associated with
24 them.

25 Q. In striking the balance that you have

1 set up for the Board, you are not asking the Board to
2 nail down these variables, are you?

3 A. What do you mean by nail down these
4 variables?

5 Q. Make them not variables.

6 A. I don't think anybody can decree that
7 the future shall be certain.

8 Q. Right. And that's where, for
9 example, the range of questions that are set out in
10 Exhibit 452 on page 32 come from, in essence. You
11 might want to take a quick look at those.
12 06.

13 [12:10 p.m.]

14 A. I have read those. Now I have
15 forgotten your question, I'm sorry.

16 Q. The range of questions that you see
17 there basically are there because there is a large
18 range of variables to be addressed by the Board and
19 flexibility is one of the values that you have
20 identified as well. That range of questions flows from
21 all of that; doesn't it?

22 A. It flows from the fact that all
23 components of the plan are to some degree
24 inter-related.

25 Q. And it also flows to some extent

1 because all of those components are themselves
2 variables?

3 A. That is part of that question.

4 Q. Now, when we look at that response
5 portfolio that you have identified in that same
6 exhibit, would you agree that basically it should be
7 judged on the basis of your strategic priority
8 directions?

9 A. The response portfolio is put down as
10 a sample, it isn't necessarily exhaustive and --

11 Q. I think you used the word
12 illustrative.

13 A. Illustrative, yes

14 Q. Because it's illustrative, the only
15 way we have to judge it is on the basis of your
16 priority strategic directions; isn't it?

17 A. The purpose of putting down the
18 sample response portfolio was to say, do we have
19 adequate responses to cover the range of risks that we
20 face, and particularly, is the range of responses
21 adequate in a situation where we are not seeking
22 approvals for major supply facilities to further
23 enhance our capability to be able to meet, for
24 instance, higher load growth or less demand management,
25 or whatever.

1 Q. So what that means is that
2 flexibility is central to the approval, isn't it, so
3 that you will have the ability to respond
4 appropriately?

5 A. Flexibility as we have said is
6 important.

7 I think what is being addressed primarily
8 through the response portfolio is, do we have
9 sufficient flexibility without requesting more
10 approvals.

11 Q. So the approval itself will be
12 important, it has to be flexible?

13 A. The approval is important and overall
14 the plan has to have sufficient flexibility.

15 Q. And the approval itself will also
16 have to have flexibility; right?

17 A. I'm not sure what you mean by that.

18 Q. Well, let's put out an example. If
19 the Board simply approves 1,400 to 1,800 megawatts of
20 hydroelectric power and a transmission line for the
21 Manitoba Purchase and the associated transmission, if
22 that's all it says, yes, here is the approval for this,
23 there is not much flexibility in there that would be
24 capable of addressing changing circumstances during the
25 life of that approval; right? Something additional is

1 going to have to be put into it, is what I am
2 suggesting.

3 A. That sort of approval inherently has
4 the flexibility, for instance, on the 1,400 to 1,800
5 megawatts, so there is flexibility encompassed there,
6 and because approvals don't have to be used, then there
7 is flexibility to use less.

8 Q. And because you might not get those
9 approvals at the site level, you still need to be able
10 to respond effectively to increased demand; right?

11 You agreed earlier that the 1,400 to
12 1,800 megawatts was a flexibility variable, it was a
13 variable. The purchase is also a variable. It might
14 not go, there is three levels of approval required for
15 that, so you need flexibility to address that as well;
16 right?

17 A. We need flexibility because all
18 elements are uncertain, yes.

19 Q. In the approval, you will need
20 flexibility in the approval?

21 A. I'm not quite sure what you mean by
22 flexibility in the approval. We have asked for a
23 certain approval and that gives a certain amount of
24 flexibility to the plan.

25 Q. Provided that everything in the

1 approval pans out as you are predicting; right? Isn't
2 that the basic assumption there?

3 A. No, I don't believe so. I believe
4 the approvals requested cover us, together with the
5 other things that are in the plan and are expected to
6 be achievable, for a range of circumstances that gives
7 quite a fair degree of flexibility.

8 Q. I would like turn to the nuclear
9 option as it currently stands now. If we can summarize
10 on that, nuclear has a very long lead time; isn't that
11 right?

12 A. Nuclear has a long lead time.

13 Q. And because of that long lead time it
14 has a certain level of inflexibility associated with
15 it; doesn't it?

16 A. Yes.

17 Q. Particularly when we look at the fact
18 that the growth pattern over the near future is, in
19 itself, a variable?

20 A. Uncertainty in growth is something
21 that makes long lead times difficult to manage.

22 Q. It's also quite an expensive option
23 as it stands right now. The trend is that it is
24 becoming more expensive.

25 A. I think that has been discussed in

1 Panel 9.

2 We talked about the levelized unit energy
3 costs of nuclear and they are in our option comparison
4 tables which are in the witness statement, Exhibit 646.

5 Q. Right. The trend there is that it is
6 becoming less economic because of the developments in
7 that technology?

8 A. Because of developments in which
9 technology?

10 Q. In the nuclear technology
11 developments. What I mean by those is the requirement
12 for retubing, the delays in construction, and so on.
13 That's making the option more expensive, less economic
14 over time.

15 A. I indicated in my direct evidence
16 that there were a number of factors that reduced the
17 economic advantage of nuclear.

18 Q. And the performance of nuclear at
19 this point is currently under somewhat of cloud, too,
20 because of the delay at Darlington, the requirement for
21 retubing at other stations, and the fact that we are
22 still on a learning curve with the nuclear technology
23 in Ontario?

24 A. I indicated that less than expected
25 performance of nuclear and difficulties with Darlington

1 was one of our reasons for being less clearly in favour
2 of nuclear than we used to be, and we are now in a
3 situation where we would have difficulty making a
4 choice between nuclear and fossil at this time.

5 Q. And the diversity of supply is an
6 important value; isn't it?

7 A. Diversity is a factor, yes.

8 Q. And at this point nuclear doesn't
9 really add that much by way of diversity given that
10 about 50 per cent of capacity is in the form of
11 nuclear?

12 A. About 50 per cent of our energy comes
13 from nuclear.

14 Q. So if you add more nuclear --

15 A. Less than 50 per cent of our capacity
16 is --

17 Q. If you add more nuclear to that, you
18 are not really adding to diversity in a significant
19 way, are you?

20 A. Nuclear is the largest single source
21 of energy and therefore adding to it does not add to
22 diversity.

23 Q. So nuclear doesn't really fit into a
24 plan that places a lot of value on flexibility and
25 diversity and a plan that's based on your strategic

1 priority directions; it really doesn't fit in very well
2 right now, does it?

3 A. We have indicated that we haven't
4 selected options for when major supply is required, but
5 nuclear remains one of the options that would be
6 considered if we came to that circumstance.

7 Q. Right. But it doesn't fit in well at
8 this point with respect to a plan that's built on
9 flexibility, diversity and your strategic priority
10 directions; right?

11 A. I haven't accepted that the plan is
12 built upon flexibility and diversity. It is built upon
13 the priority strategic directions, it's built upon all
14 of the criteria that are discussed in the Exhibit 74 of
15 which flexibility and diversity are two, others include
16 important factors such as customer satisfaction,
17 reliability, low cost, environmental protection, so
18 there are many other factors besides flexibility and
19 diversity that are important in the balance that is
20 produced in the plan.

21 Q. Right. That's why I referred to the
22 strategic priority directions as well. And given
23 everything you have just said, nuclear just doesn't fit
24 in well at this point, does it?

25 A. I have indicated that we are not in a

1 position where we would select nuclear over the fossil
2 or fossil over nuclear when we need major supply.

3 We do have a plan where the preferred
4 options identified in the priority strategic directions
5 are capable, we believe, of meeting our requirements
6 for a substantial period into the future, and that's
7 the way we have chosen to go.

8 Q. Right. Because at this point your
9 plan says it's better to choose options like
10 non-utility generation and demand management as opposed
11 to nuclear or fossil fuel, if you want to put that in
12 there too; isn't that correct?

13 A. Our priority strategic directions are
14 that we would prefer economic demand management and
15 economic non-utility generation over major supply,
16 fossil or nuclear, and we believe there is sufficient
17 economic demand management and economic non-utility
18 generation, hydraulic and so on, that we don't need
19 major supply for some substantial period of time.

20 Q. What you are saying then is that
21 nuclear would be an option if there wasn't, for
22 example, a significant economic amount, a significant
23 amount of economic demand management, a significant
24 amount of economic non-utility generation, things like
25 that. That is what you are saying; right?

1 A. There are a number of major supply
2 options that are open to us and nuclear is one of them.

3 Q. And right now, it is not really an
4 option for the present because there are significant
5 economic quantities of other options that are more
6 flexibility and bring more diversity to the system?

7 A. Those are some of the reasons that we
8 have decided to remove our request for nuclear
9 approvals from our request of approvals.

10 Q. And in addition there are short lead
11 time economic options available as well at this point,
12 such as CTUs and combined-cycle gas-fired stations and
13 the like?

14 A. They are relatively economic with
15 current natural gas prices and fossil fuel prices, but
16 particularly natural gas.

17 Q. Just on that point, I am just
18 wondering if you had any comment to make on the fact
19 that just after Mr. Rogers cross-examined on behalf of
20 Ontario Natural Gas Association there was a major
21 announcement of reduced gas prices. I think it was the
22 day after. Are you are aware of that?

23 A. Not specifically, no.

24 Q. Okay, I will leave it at that?

25 A. I didn't know the two events were

1 associated even if they did happen.

2 Q. Well, I don't know what Mr. Rogers'
3 connections are.

4 Thank you very much, panel. That is all
5 the questions I have.

6 Mr. Chairman, just before I bow out, last
7 Friday the Ministry of Energy released a document
8 entitled: A Framework for Energy Efficiency and
9 Conservation in Ontario. I have made several copies
10 available to Mr. Lucas.

11 Basically this document outlines the
12 framework for meeting Ontario's changing energy needs
13 and opportunities for enhancing energy efficiency in
14 Ontario and it includes a range of options and tools.
15 Just on the list we have reducing energy use in
16 government buildings, vehicles, and social housing;
17 reducing electricity use through fuel switching and
18 demand management, examining options for residential
19 rate structures to reduce power consumption; upgrading
20 efficiency standards, incorporating greater energy
21 efficiency into building standards, reducing energy use
22 by expanding tax incentives that encourage prudent
23 consumption and providing incentives and programs to
24 encourage investment in energy efficiency.

25 The items that are set out in this

1 document are part of an involving process which Ms.
2 Couban made a brief statement to quite early on in the
3 hearing and this is a continuation of that work and
4 there will be more obviously along this line. So if we
5 could perhaps have the next exhibit number.

6 THE REGISTRAR: 729.

7 ---EXHIBIT NO. 729: Document entitled: A framework
8 for Meeting Ontario's Changing Energy
9 Needs and Opportunities for Enhancing
Energy Efficiency.

10 MR. MORAN: The last item I want to bring
11 to your attention, Mr. Chairman, is there is an ongoing
12 process in the Moose River Basin. A second stage is
13 being entered into and very shortly I will be providing
14 you with a brief description of what that process
15 entails and where it is going. I anticipate being able
16 to have that to you by letter, I hope, at least by next
17 week. That is what I have been advised.

18 Thank you, Mr. Chairman.

19 THE CHAIRMAN: Thank you, Mr. Moran.

20 Mrs. DeQuehen, you are next.

21 [12:20 p.m.]

22 CROSS-EXAMINATION BY MRS. DeQUEHEN:

23 Q. I would just like to ask some general
24 questions. We understand that first and foremost this
25 is an environmental assessment undertaking but it's

1 become confused by the update process, the approvals
2 component, and different time deadlines applied. The
3 environmental assessment objectives have become
4 obscure.

5 I think many groups are having a certain
6 difficulty with this. In the event, I would like to
7 ask some general questions about Ontario Hydro's
8 position with regard to this present hearing.

9 Firstly, I would like to clarify the
10 difference between a general environmental hearing
11 process and a site-specific hearing process.

12 MR. SNELSON: A. I believe that this
13 is -- we are treading on the fringes of legal
14 territory, but that in very general terms, through this
15 process we are seeking approvals of fundamentally the
16 requirement and rationale for certain types of
17 facilities defined by a range of megawatts of
18 hydroelectric capacity and the transmission to perform
19 a certain purpose associated with the Manitoba
20 Purchase, and that in this general process, that is the
21 level of approval that is being sought. And that would
22 then -- a site-specific process for a generating plant,
23 for instance, would be looking at where is the best
24 place to build a generating plant of that particular
25 type or size, where should it be located and the full

1 range of options of siting will be looked at.

2 So there is a distinction. The overall
3 balance of the plan is being looked at in this process,
4 coming down to approvals of some specific types of
5 options, which is now a narrower selection than it was
6 in '89, and the site-specific process would be looking
7 at a more detailed definition of what those facilities
8 should be and where they should be located.

9 Q. It is really the environmental
10 component which I am interested in, and the
11 environmental approvals which you are seeking.

12 Would you say that we are only
13 considering generic and general effects of supply
14 options and not considering specific projects and not
15 looking at site-specific characteristics, but we are
16 looking at the generic effects?

17 MS. HOWES: A. Yes, that's true.

18 Q. Ontario Hydro representatives have
19 informed the public through the information centre that
20 the environmental assessment process has been split
21 into two stages. The first hearing is to obtain
22 approvals for environmental impacts and generic effects
23 and options, this will be followed by another
24 site-specific environmental approval, and this you
25 confirm, that in all cases it would definitely be

1 followed by another site-specific?

2 A. Yes, it would definitely be two
3 stages. But just to clarify, we are looking only at
4 this point for requirement and rationale for the
5 Manitoba Purchase and the hydraulic plan. We are not
6 seeking approval for generic environmental effects.

7 Q. Now, this is my concern, it's my
8 understanding that at the second hearing, the
9 site-specific hearing, only specific characteristics
10 and site-specific related matters can be referred to.
11 Intervenor may not voice objections to generic effects
12 of the options. For example, they could not refer to
13 concerns about health and safety of an option.

14 Would this be the case?

15 MR. B. CAMPBELL: Well, I think, Mr.
16 Chairman, we have tried to clarify as much as we can
17 and over a variety of motions, arguments, et cetera,
18 over the course of this matter, the distinction we see
19 or the use we expect to make of the approvals obtained
20 here and it is Ontario Hydro's position that if it
21 obtains the approvals in relation to the issues that
22 are of concern in this hearing, it would not deal with
23 those issues again in the site-specific hearing. It
24 would be associated with the approval of the specific
25 facility at a specific location.

1 MRS. DeQUEHEN: Q. With regard to
2 approvals, could we turn to Volume 153, page 27018.

3 THE CHAIRMAN: I'm sorry, I didn't get
4 the number of the page.

5 MRS. DeQUEHEN: Volume 153. I don't seem
6 to have it here. Page 27018, line 5. Mr. Heintzman is
7 speaking and he says:

8 So it takes what we may have been
9 calling all the major fossil and nuclear
10 options off the table?

11 And the answer is:

12 It takes all the approvals off the
13 table for major fossil and nuclear
14 options, yes.

15 But it does not take the environmental
16 assessment approvals for nuclear and fossil off the
17 table, does it?

18 MR. B. CAMPBELL: Mr. Chairman, I don't
19 understand the difference.

20 THE CHAIRMAN: I'm sorry, what don't you
21 understand, Mr. Campbell?

22 MR. B. CAMPBELL: There was a reference
23 here, the cross-examiner referred to the approvals are
24 off the top for major fossil and nuclear options and
25 then asked the question, but it doesn't affect or

1 doesn't take off the table the environmental assessment
2 approvals, and I don't know what the difference is
3 between those two.

4 THE CHAIRMAN: I think what Mrs. DeQuehen
5 may be referring to is the generic effects of the other
6 options which are not captured within the specific
7 approvals, specifically generic effects of fossil
8 generation, nuclear generation and so on.

9 Is that what you are referring to?

10 MRS. DeQUEHEN: It says it takes all
11 approvals off the table, but they are still asking
12 for -- this is what I am trying to find out, are they
13 still asking for environmental assessment approval of
14 the major options? Are they asking for a full
15 environmental assessment hearing and approval of the
16 nuclear option and of the fossil fuel option?

17 MR. B. CAMPBELL: I think it is fair to
18 say, Mr. Chairman, that we are not asking for any
19 approvals with respect to nuclear or fossil major
20 supply.

21 We have, in arguing a variety of motions
22 before you, also taken the position however, that under
23 the Environmental Assessment Act the Board is required
24 to look at a range of alternatives, all of their
25 environmental characteristics in the fullest sense of

1 the word in order to determine whether it wishes to
2 grant Ontario Hydro the approvals that it has
3 requested, and they have been accurately described as
4 relating Manitoba transmission and the 1,400 to 1,800
5 megawatts of hydraulic facilities and the incorporating
6 transmission for that.

7 THE CHAIRMAN: It maybe farther than
8 that. I recall Mr. Shalaby saying in some panel that
9 Hydro would welcome the views of this panel that is
10 sitting here on the characteristics of the various
11 options and that those views might be useful in future
12 proceedings.

13 So I think that the question that is put
14 is an important question. I don't think it can be just
15 put off on what really are technical grounds.

16 MR. B. CAMPBELL: Mr. Chairman, while I
17 am fully aware Mr. Shalaby's answer, the fact of the
18 matter is that the Board has to reach some conclusions
19 on those characteristics, in my submission, in order to
20 do its job with respect to the approvals that are being
21 requested.

22 Ontario Hydro, though, has been
23 absolutely explicit that the approvals that it sees as
24 having legal effect and transferable forward to a
25 future hearing relate only to the specific approvals

1 being requested, that is the Manitoba transmission, the
2 hydraulic and the associated radial transmission. That
3 is Hydro's position.

4 MRS. DeQUEHEN: Then do I take it you are
5 asking for a complete, comprehensive and final general
6 environmental assessment and clearance of the CANDU
7 nuclear option for the next 25 years?

8 MR. B. CAMPBELL: That is absolutely not
9 correct, Mr. Chairman.

10 MRS. DeQUEHEN: So you are not regarding
11 this as a general environmental assessment for the
12 CANDU option, that will be repeated?

13 MR. B. CAMPBELL: Should the Board grant
14 the approvals that Ontario Hydro is requesting, then it
15 would require full environmental assessment approvals
16 before it proceeded with any CANDU station, and no part
17 of that would be gained through these proceedings.

18 MRS. DeQUEHEN: So in Volume 148, page
19 26176, lines 6 to 8 --

20 MR. B. CAMPBELL: Could I get the page
21 number again, Mrs. DeQuehen?

22 MRS. DeQUEHEN: Yes. 26176.

23 This is Mr. Starkman speaking, line, 6,
24 7, 8. Mr. Starkman says:

25 Mr. Chairman, I mean the whole

1 question of the life cycle of the nuclear
2 plan I think will be up for discussion.

3 So I presume he is right, the nuclear
4 option is merely up for discussion. It is not to
5 undergo a full, final comprehensive general
6 environmental assessment approval; is that correct?

7 MR. B. CAMPBELL: I think it is correct
8 to say, Mr. Chairman, that Ontario Hydro is not
9 requesting such an approval.

10 MRS. DeQUEHEN: If I may ask this once
11 more, it is repetitive but I just want to firmly
12 establish this because there has been a lot of talk
13 about it. Everyone I have asked has given me a
14 different opinion.

15 So you are not asking for approvals of a
16 nuclear supply facility, neither are you regarding this
17 hearing as the general environmental hearing for the
18 nuclear supply option?

19 MR. B. CAMPBELL: You changed the
20 question somewhat.

21 MRS. DeQUEHEN: Yes, I have, but I just
22 want to really define the position.

23 MR. B. CAMPBELL: It is clear,
24 unequivocally clear, that Ontario Hydro is asking -- is
25 not asking, Ontario Hydro is not asking either in whole

1 or in part for a nuclear approval in this hearing.

2 It is equally clear that in doing its job
3 in Hydro's submission and those of many others at the
4 hearing I expect, that in looking at the
5 characteristics of various options, the nuclear is one
6 option that it has to look at to see whether the
7 approvals that Hydro is requesting are appropriate.

8 That's my submission, it has been my
9 submission on behalf of Ontario Hydro, that the Board
10 by dint of the Environmental Assessment Act and the
11 requirements under that Act must at least understand
12 the characteristics of the nuclear options, understand
13 why Hydro has taken the view that it is no longer going
14 to ask for any approvals in relation to nuclear, and
15 presumably must be persuaded that that position is
16 correct either for the reasons given or for other
17 reasons.

18 THE CHAIRMAN: What expectations, if any,
19 does Hydro expect to get from this hearing, from this
20 Panel, with respect to the nuclear option?

21 MR. B. CAMPBELL: Ontario Hydro expects
22 that the Board, in examining the nuclear and all other
23 options, will have to arrive at some conclusion as to
24 what are the characteristics, advantages and
25 disadvantages, to use the words of legislation, of

1 those options. That is the job that you are charged
2 with by the statute, in my submission.

3 That provides a base of information upon
4 which you will have to consider the further question as
5 to whether to grant the approvals that Ontario Hydro is
6 requesting and those approvals at this point do not
7 relate either - to respond directly to your question -
8 do not relate to nuclear facilities.

9 THE CHAIRMAN: So would it be fair to say
10 in answer to Mrs. DeQuehen's question, that no, this is
11 not going to be final in the sense of a final
12 determination of the viability of a nuclear option, but
13 it will provide some guidance to the future on the
14 characteristics of that option, and that therefore it
15 will be considered now in 1992 in a comprehensive way?

16 MR. B. CAMPBELL: I think now in 1992 it
17 will be, yes, a comprehensive view based on all of the
18 evidence of the characteristics, advantages and
19 disadvantages of the nuclear option and the other
20 options that are being discussed before you.

21 THE CHAIRMAN: And given if, as and when
22 any future approval of nuclear supply is requested,
23 then, of course, that request will have to be
24 processed, whatever is the appropriate process at that
25 time, in which case the characteristics will then have

1 to be again examined, I would expect.

2 MR. B. CAMPBELL: That would be my
3 expectation.

4 MS. PATTERSON: But just to clarify the
5 expectations of us in terms of alternatives or
6 alternative methods of carrying out the undertaking. I
7 think there is still, if we took the arguments of MEA
8 and AMPCO, et cetera, the possibility that if they
9 convinced us we should approve Hydro's original
10 application, that we would be making a more clear
11 delineation of what we thought the advantages of
12 nuclear and fossil, major fossil supply were.

13 What I am saying, I think, is that it
14 depends on the outcome of the hearing how much the
15 Board is going to say about the nuclear option.

16 MR. B. CAMPBELL: Absolutely. I have
17 tried to speak in terms of trying to be as clear as I
18 can be about Ontario Hydro's position on this matter.
19 I detect from time to time that that is not the
20 position that would be taken at the end of the day or
21 the approvals that would be urged upon you at the end
22 of the day by certain other parties such as AECL and
23 MEA.

24 I have been asked to speak to Ontario
25 Hydro's view of what it's asking for at the end of the

1 day and I don't want anything that I have said to be
2 taken to go beyond that.

3 And again, let's sort of put aside a
4 little bit of fog on this. My suspicion is that,
5 certainly from what I have perceived, it may be that
6 there are parties to this hearing who will tell this
7 panel that in their submission Hydro's approvals are
8 inadequate and that approvals above and beyond what
9 Hydro has been asking for should be granted by this
10 panel. It's not for me to speak to, but just perhaps
11 to respond to the spirit of your question and Mrs.
12 DeQuehen's, that is possible.

13 In making my remarks I have spoken to
14 Hydro's position.

15 MRS. DeQUEHEN: I'm sorry, I just have a
16 had questions to follow on from that if I may to
17 clarify it.

18 So would Ontario Hydro then be prepared
19 to undertake a full environmental general assessment of
20 the nuclear option at some date in the future?

21 MR. B. CAMPBELL: If Ontario Hydro wishes
22 to pursue the nuclear option at some date in the
23 future, it will be fully subject to whatever processes
24 are in place at that time. Assuming today's processes,
25 that would involve a full environmental assessment

1 process.

2 MRS. DeQUEHEN: So I have your assurance
3 that it would not go straight from this hearing to a
4 site-specific hearing?

5 MR. B. CAMPBELL: It is Ontario Hydro's
6 position that if the approvals are granted as requested
7 by Ontario Hydro, it could not do that, in that
8 without, what you are calling a site hearing,
9 encompassing the full range of issues; that is, it
10 would have nothing from this Board that would settle
11 the requirement and rationale portion of planning
12 considerations.

13 THE CHAIRMAN: I don't know whether you
14 were here, Mr. Campbell, when Mr. Snelson was asked a
15 question something like that, and he said, well, we
16 don't know exactly what kind of process we are going to
17 go through. We may do it in two processes or we may go
18 straight to a site-specific hearing. He certainly gave
19 that possibility.

20 Is my recollection right?

21 MR. SNELSON: Yes, but in that case the
22 site-specific hearing would have to satisfy, in my
23 understanding, all of the requirements of the under the
24 Environmental Assessment Act, including rationale and
25 need.

1 MR. B. CAMPBELL: Which I hope is what I
2 said, probably not as well.

3 THE CHAIRMAN: I think Mrs. DeQuehen's
4 question was framed in such a way that she said there
5 was an assurance that there wouldn't be a site-specific
6 hearing. That is a possibility.

7 MR. B. CAMPBELL: Well, in a sense that
8 it is possible to approach these matters by simply
9 having one application for a facility that covers the
10 whole -- both the planning issues and the siting
11 issues, and yes, that's a possibility, of course.

12 MRS. DeQUEHEN: Would that perhaps be
13 termed a project assessment rather than a site-specific
14 assessment?

15 MR. B. CAMPBELL: I wouldn't make any
16 distinction between those terms. If I was making
17 submissions it would be simply one application that
18 would cover both the broad planning issues to the
19 extent they were relevant, all issues that were
20 relevant to actually getting to the point where one
21 constructs a facility, from the beginning right through
22 to that end.

23 As you know, that is not what we have
24 tried to do here. We have tried to deal with the
25 planning issues here.

1 I come back, though, to the point with
2 respect to the nuclear option. If Ontario Hydro is
3 granted to the approvals it is requesting in these
4 proceedings as they now stand, it is Hydro's position
5 that these approvals would not assist it in furthering
6 a nuclear application of that type.

7 MRS. DeQUEHEN: So is it your position
8 that much of this material, which is being presented,
9 would have to be -- could be repeated at another
10 hearing?

11 MR. B. CAMPBELL: That's entirely
12 possible. We will have to look at the requirements for
13 that application and the circumstances of that time.

14 But I have said that we can't eliminate
15 anything on the basis of these approvals for any kind
16 of nuclear application in the future if we are granted
17 the approvals that we are asking for here.

18 MRS. DeQUEHEN: But does that not mean
19 that much of this would be repeated if there was to be
20 a full hearing later for the environmental option --
21 for the nuclear option?

22 MR. B. CAMPBELL: I think that's
23 possible, but legislation changes, all other things
24 being equal, it is possible that these same issues
25 would be to have addressed, that is planning issues

1 would have to be addressed.

2 I can't contemplate going through, having
3 the Corporation go through all of this material again,
4 but obviously planning issues would have to be
5 addressed. What that involved would have to be dealt
6 with in the circumstances at that time.

7 It might be new and better material. I
8 don't know.

9 [12:47 p.m.]

10 MRS. DeQUEHEN: I'm sorry to harp on
11 this, it is just that in my opinion, most intervenors
12 really believe that we were undertaking a full general
13 environmental assessment at this hearing and have
14 prepared for that. And it seems important to me that
15 we have an assurance that this is not so, because other
16 wise, there are a lot of inadequacies in this material
17 should this be a -- hearing, which we must criticize.

18 However, if it this is not a full hearing
19 and we are merely looking critically at various
20 characteristics, then there isn't the same demand for
21 detail and data, and analysis. So I think it is really
22 confusing for intervenors.

23 Just this last question I would like to
24 ask on this subject. This is in Volume 148, page
25 26255, Dr. Tennyson is speaking, line 12.

1 There is also the view that the
2 planning and approval processes for both
3 Demand/Supply Plan and new facilities
4 should be open to public and government
5 input and review.

6 This sounds as though Dr. Tennyson is
7 pronouncing that environmental assessment process is to
8 be kept open, as well as the supply options, which I
9 think is the conclusion that Campbell has given.

10 However, earlier, when talking to Mr.
11 Poch -- I don't think we need to turn to the volume, or
12 you may have it, Volume 131, 23025. There was
13 discussion about the lead time for CANDU 6 at
14 Darlington, and there was talk about the timing of the
15 hearing. In that instance, it seemed to imply quite
16 specifically that it was a site-specific hearing that
17 was being addressed and there was no suggestion that
18 there would be a hearing before the site-specific
19 hearing.

20 So this has come up before, and I think
21 that people have not known what to conclude from all
22 these different references to hearings.

23 I would like to ask some questions about
24 public consultation process. And I do have a lot of
25 questions but quite honestly they were all questioning

1 the inadequacy of your data, because I believed this
2 was a general environmental assessment hearing.

3 However, if it is not, it is not really
4 relevant. I mean, I can still criticize the process,
5 but what is the bottom line? What are we actually
6 demanding of Ontario Hydro at this moment? I don't
7 really know quite how to proceed with that. But I
8 would just like to refer to the public consultation
9 process.

10 Q. Mr. Snelson, you said that you
11 attended the provincial public meetings which were set
12 up in late 1985 to early 1986?

13 MR. SNELSON: A. Yes, we were just
14 checking the dates, and I believe that is correct and I
15 was at those meetings.

16 Q. Did you attend the meeting held at
17 Port Hope?

18 A. That was a regional community
19 leaders' meeting and yes, I did attend it.

20 Q. Two members of our group at the
21 present, Patricia Lawson and Linda Lapeer and it was
22 simply by invitation, not advertised. It was described
23 by the people who attended as a social event with over
24 tones of a public relations exercise. It consisted of
25 a lunch engagement at Greenwood Tower Inns; is that

1 correct?

2 A. No, it was in the evening.

3 Q. It was a dinner?

4 A. It was a dinner that preceded it,
5 yes.

6 Q. Well, this is what I have. And
7 during the course of the event, someone from Hydro made
8 a short address stating that Hydro was engaged in
9 ongoing planning and interested in public views, saying
10 they would be obliged if people present would fill in a
11 questionnaire afterwards. Is this what the engagement
12 involved?

13 A. There was a short introductory
14 presentation made. I believe by the regional manager.
15 There was, I believe, an executive vice president who
16 was there as the senior person and following the
17 presentation, which only took a small part of the
18 meeting, there was a very lively discussion that
19 followed with a wide variety of views that were
20 expressed by the participants in the meeting. And
21 during that period then Ontario Hydro would respond to
22 direct questions that were asked, but generally
23 speaking we were in the position of listening to the
24 views of the participants.

25 Q. But in general, there was no agenda,

1 no definite proposals put forward, people given no
2 definite information about a planning process, and they
3 were not invited to participate in any process?

4 A. That is quite a list there.

5 Q. Could it really be called a
6 consultation meeting with regard to the DSP planning
7 process?

8 A. There were some very substantive
9 opinions that were expressed at that meeting, I recall
10 it well, on a variety of issues and from quite
11 different perspectives.

12 Q. The people weren't invited to
13 participate in any process.

14 A. Well, the information was available
15 to them. And there was the presentation that preceded
16 it and there was also information that was made
17 available to them after the meeting on request.

18 Q. It can be described as in and out
19 once, as Dr. Tennyson used that expression. I mean,
20 between 1985 and 1989, Hydro never contacted or
21 consulted with these people again.

22 DR. TENNYSON: A. I don't remember ever
23 making the statement, but I --

24 Q. I saw it in one of the transcripts.
25 You said it had been an ongoing involvement, it wasn't

1 an in and out --

2 Well, it doesn't matter if you said it.

3 A. I said it was ongoing.

4 Q. Yes, but what I am saying, in our
5 area there was the one meeting and nothing after that
6 was ever conducted until the information meeting in
7 1989?

8 A. Well, it is my understanding that
9 certainly in terms of the Select Committee on Energy,
10 there were a lot of submissions made and presentations
11 made. So people could have kept an ongoing
12 relationship using these different formats. And
13 certainly any people who have expressed interest in
14 electricity planning over this period have been invited
15 to additional sessions. I am certain were part of the
16 mailing list for the demand/supply feedback program.
17 But I take your point. There may not have been a
18 specific regional meeting held with these people after
19 that.

20 Q. Well, during that time, there were
21 environmental groups in the areas, in the
22 Northumberland area, and a number of different groups
23 involved in energy matters. There was a Joint
24 Environmental Assessment/Energy Board hearing held,
25 which had a decision in 1986. After that there was a

1 energy review process, part of which was about public
2 participation in which there was a group, I have
3 information here if you would interested, which
4 participated.

5 It was such a lot of interest at that
6 time in the area for participation in matters with
7 regard to energy and somehow, no one appeared to even
8 be aware of the fact that Ontario Hydro was involved in
9 this process. I wonder how that could have happened.
10 When the people were there, wishing to participate and
11 you say, you have made such an effort to get people to
12 participate. In both of those, the review and the
13 hearing, Ontario Hydro was a participant, so it was
14 known to you. I wonder how you could have failed to
15 inform people that this was going on.

16 [12:57 a.m.]

17 A. Well, I would not admit that Ontario
18 Hydro had failed.

19 In terms of the regional consultation
20 program, that was actually a third party consultation
21 program. The invitations were sent by community
22 leaders to invite others in the community that were
23 known to have interests in agriculture, business, the
24 environment, women's issues, labour, social welfare and
25 other public affairs.

1 So based on that, I feel that the people
2 that were involved in the community were asked to
3 participate.

4 In addition, for the provincial level
5 there were over 100 organizations invited at that time.
6 I certainly think there was adequate opportunity to be
7 involved.

8 Q. If I may just hand this out for
9 reference. It's not an exhibit. But it just seems to
10 me that if you have a community which is so interested
11 in these affairs and somehow you fail to make contact,
12 I just -- I don't know that you ever really tried
13 beyond that one meeting, but...

14 THE CHAIRMAN: Now this document that you
15 have just handed out --

16 MRS. DeQUEHEN: The first two pages --

17 THE CHAIRMAN: Just a moment. It looks
18 to me like it's a factum in another hearing. Is that
19 what it is?

20 MRS. DeQUEHEN: Yes, there are two. The
21 first is the Energy Board hearing, this is just
22 documentation that we were involved, and the second is
23 a review process which people were involved in over
24 these years and did a lot of work for and were so
25 interested in, and it was particularly about public

1 participation. It wasn't particularly Ontario Hydro
2 directly but I am just saying the potential was there
3 and you didn't attempt to use it.

4 THE CHAIRMAN: I am not quite sure what
5 the purpose of your presenting this document to the
6 Board is. Anyway, I notice it's one o'clock, perhaps
7 we could take the luncheon break at this time.

8 MRS. DeQUEHEN: I am merely presenting it
9 as evidence that we were actually involved and
10 interested and it seems ironical that we were involved
11 in a subject which showed that the community was
12 interested in energy matters and public participation
13 and even so --

14 THE CHAIRMAN: I am not quite sure I
15 follow. Are you saying you were not communicated with
16 in respect to the DSP?

17 At the me you referred to there were
18 representatives of your organization there. I think
19 Ms. Lawson and Ms. Lapeer, I think you said.

20 MRS. DeQUEHEN: Yes, Ms. Lapeer and Ms.
21 Lawson, when they came back and presented the evidence
22 to the group, did not say that there was any way in
23 which we could participate directly, that it was just a
24 vague meeting in which a lot of views were expressed
25 and now Dr. Tennyson says there was some method. I

1 will have to go back and check. But even if that
2 meeting in 1985 hadn't lead to anything, we were never
3 contacted again, and there was no further effort after
4 that meeting to try and interest people.

5 THE CHAIRMAN: We will adjourn now until
6 2:30.

7 THE REGISTRAR: Please come to order.
8 This hearing will adjourn until 2:30.

9 ---Luncheon recess at 1:03 p.m.

10 ---On resuming at 2:35 p.m.

11 THE REGISTRAR: Please come to order.
12 This hearing is again in session. Please be seated.

13 MRS. DeQUEHEN: Q. Dr. Tennyson, with
14 regard to proper consultation prior to the publication
15 of the DSP, I am referring to the information centres
16 now, response from the public at that time could not
17 really be regarded as consultation or input, could it?

18 DR. TENNYSON: A. I'm sorry, prior to
19 what time are you speaking?

20 Q. The consultation process, subsequent
21 to its publication, and I am referring to the
22 information centres that were set up in 1989, that
23 could not really be regarded as a public input or
24 consultation process, could it? They were merely
25 commenting on a plan which had already been led out in

1 detail and there was no chance for any input into that
2 plan at that time?

3 A. The activities, once the
4 Demand/Supply Plan was submitted, have been called the
5 Feedback Program, and you are right, comments were
6 solicited, information was provided.

7 I think if you look at the questionnaire,
8 it says that that information from the program would be
9 provided back to senior management at Hydro and as well
10 the results would be available for the Board here.

11 I would like to add, though, that I think
12 we have led evidence to suggest that the activities in
13 terms of the regional consultation, the provincial
14 organization consultation, the Select Committee hearing
15 all were inputs to the Demand/Supply Plan.

16 Q. I haven't heard you refer to the
17 Ontario Nuclear Safety Review. That was public, an
18 open public process. It was advertised and there was a
19 lot of public participation; is that not so?

20 A. I'm not that familiar with the
21 details of that program, but if you say so, fine.

22 Q. Well, that surprises me.

23 THE CHAIRMAN: I think it is on record,
24 there was a considerable number of organizations that
25 participated in that inquiry, including your own

1 organization that participated in that. Am I not right
2 about that?

3 MRS. DeQUEHEN: We didn't actually
4 participate, but Nuclear Awareness did.

5 THE CHAIRMAN: I see, all right.

6 MRS. DeQUEHEN: Q. It surprises me that
7 you are not aware of the submissions that were made by
8 the public because that certainly -- can you not hear?

9 DR. TENNYSON: A. Yes, I can hear.

10 THE CHAIRMAN: I don't think she said
11 that. She didn't say she wasn't aware of the
12 submissions made by the public at the Nuclear Safety
13 Inquiry. I don't think she said that.

14 MRS. DEQUEHEN: I see.

15 THE CHAIRMAN: You can ask her if she is
16 aware of them if you like, but I don't think she said
17 she wasn't aware of them.

18 MRS. DeQUEHEN: Q. It surprises me that
19 you said you were not -- I beg your pardon, could you
20 repeat your answer?

21 DR. TENNYSON: A. I said I was not
22 familiar with the details of the program. I thought
23 you were referring to a consultation program.

24 Certainly I am aware of the fact that
25 such a review was undertaken and there are many at

1 Hydro that are fully cognizant and knowledgeable of the
2 input into it.

3 Q. Have you read all the submissions
4 from the public that were made in that process?

5 A. I personally have not, no.

6 Q. Have the content of these submissions
7 been included in your feedback process?

8 A. This feedback document documents the
9 results of the Feedback Program on the Demand/Supply
10 Plan.

11 Q. You did say that you took great
12 notice of the public participation component with
13 regard to the Select Committee proceedings, did you
14 not?

15 A. I think it is well documented that
16 all the recommendations of the Select Committee and
17 what Ontario Hydro did with that information and those
18 recommendations in preparing the Demand/Supply Plan,
19 the evidence has been brought to bear here.

20 Q. I just wonder why in a similar
21 fashion you didn't use all the evidence from the
22 Ontario Nuclear Safety Review.

23 MR. SNELSON: A. The Select Committee
24 was a specific process to review the draft
25 demand/supply planning strategy, and we, as Dr.

1 Tennyson has said, responded specifically to each
2 recommendation of the Select Committee. We also
3 responded to all of the substantial comments that were
4 made by the people who presented information to the
5 Select Committee, including many people who had the
6 view that they had doubts about nuclear safety and
7 nuclear performance, and those views were expressed
8 directly to the Select Committee and we responded to
9 those views.

10 Q. But, Mr. Snelson, do you agree that
11 the submissions to the Ontario Nuclear Safety Review
12 would have been an extremely useful source of
13 information about public views, and as such, could have
14 been used by Ontario Hydro?

15 A. Fundamentally, what we took mostly
16 out of the Ontario Safety Review was the report by did
17 Dr. Hare, who I believe was the principal involved in
18 that review. And while at times we may have used some
19 of the input information, I am not aware of the
20 specific cases in which we did, but we took from that
21 his report, and that was dealt with, I believe, in
22 considerable detail by the people who were responsible
23 for it.

24 Q. With regard to a review of this type,
25 in general the reviewer summates all the information

1 and tries to put forward the extensiveness of issues
2 and all the views expressed by the different
3 intervenors, rather than to put forward his or her own
4 opinion, is that not so? I mean, that is generally the
5 purpose of a review.

6 A. A review document will generally
7 summarize the inputs that were received and draw from
8 that towards the conclusions that the reviewer wishes
9 to draw, recommendations that they wish to make.

10 Q. Do you have Volume 3 of
11 Northumberland Environmental Protection, Exhibit 679,
12 or do you have the Ontario Nuclear Safety Review?

13 I did ask Gail Morrison whether she could
14 provide this document for the Panel, I mean this volume
15 and exhibit for the Panel and for you because I would
16 be using it.

17 A. We do have Exhibit 45 and Exhibit
18 679, yes.

19 Q. Which is the Ontario Nuclear Safety
20 Review?

21 A. We have Exhibit 45 which is the
22 Safety of Ontario's Nuclear Power Reactors, the Report
23 to the Minister by Kenneth Hare, and we have Exhibit
24 679, Volume 3 of Northumberland Environmental
25 Protection's document.

1 Q. Thank you. Again, it is just for
2 reference purposes, you don't really need it.

3 Reference 58 of Volume 3, which is
4 Exhibit 679, or alternatively, page 195, of the Safety
5 of Ontario's Nuclear Reactors.

6 A. I have a page which says 195 at the
7 top, so it's probably the page you are referring to.

8 Q. Sure. Section 414?

9 A. Yes, that is on this page.

10 Q. If I could just read these few
11 sentences. This is from Kenneth Hare's, not the
12 summary but the original document.

13 As regards AECB's alleged lack of
14 public involvement and the often
15 expressed feeling that there should be
16 direct public participation in its
17 decisions, I have mixed feelings. Much
18 of the cry for public participation seems
19 to me to be an assault on representative
20 democracy.

21 Do you think that expression of feelings
22 by the reviewer expresses a very liberal attitude
23 towards public participation?

24 A. Well, I am reading the rest of the
25 paragraph, and the last phrase of the paragraph, I

1 believe referring to the public, the very last sentence
2 says: There is a need to bring them into the
3 decision-making framework.

4 So I really couldn't comment on Dr.
5 Hare's views in this regard.

6 Q. Yes. Well then, if we go on it says:

7 Ontario should finance the work of
8 intervenors at such hearings, especially
9 those that are critical of the nuclear
10 industry. The best ways of disarming
11 criticism or to invite it, to accept it
12 when it makes sense and reject it when it
13 does not.

14 But even so, it doesn't express a very
15 open attitude towards public participation, and do I
16 take it that you are familiar with the document and all
17 the submissions?

18 A. I am not familiar with the
19 submissions to the Hare Commission or in detail with
20 its report.

21 Q. Well, the report ignores the
22 submissions of the public to a large extent, however,
23 those submissions were made and they give a very strong
24 view of the concerns of the public towards nuclear
25 health and safety. I would think that if you were

1 really interested in the views of the public on this
2 subject, you would have thoroughly familiarized
3 yourself this with report.

4 MR. B. CAMPBELL: Excuse me.

5 THE CHAIRMAN: I'm sorry, excuse me.

6 The evidence is that they are familiar
7 with this report and they have studied it and no doubt
8 it went into the process that resulted in the
9 Demand/Supply Plan. I think that's been their
10 evidence. So I don't think it's fair to suggest to
11 them that they didn't do that.

12 They may not have accepted all the views.
13 There was many diverse views given to Dr. Hare and they
14 may not have accepted all those views, but certainly
15 according to the evidence, they are aware of it and
16 they have taken them into consideration.

17 MRS. DeQUEHEN: Q. Would you say that
18 you have thoroughly familiarized yourself with all the
19 submissions and have a process whereby these views were
20 taken into account?

21 MR. SNELSON: A. I believe that Ontario
22 Hydro staff who were involved in the Hare Commission
23 would have been thoroughly aware of all the
24 submissions, and that people who are concerned with
25 nuclear safety have at least thoroughly reviewed the

1 report and its recommendations and how to respond to
2 them, and that I believe the primary place where that
3 would have been discussed in this hearing would have
4 been with respect to nuclear safety issues on Panel 9.

5 Q. Well, I think I am just bringing it
6 up now because I wish to emphasize the public
7 perception and feelings about nuclear safety rather
8 than the technology itself.

9 [2:43 p.m.]

10 A. I think that we are aware that there
11 is a body of public opinion that believes our nuclear
12 plants are not sufficiently safe. I believe that view
13 was expressed to the Select Committee in submissions
14 directly to the Select Committee and that is one of the
15 views that has been taken into account - maybe not
16 completely accepted, but taken into account - in
17 preparing our Demand/Supply Plan.

18 Q. I am aware that Ontario Hydro is not
19 asking for environmental assessment approvals but some
20 other party might. In which case, I wonder whether you
21 have a copy of the government review: Review under the
22 Environmental Assessment Act, Ontario Hydro's
23 Demand/Supply Plan?

24 THE CHAIRMAN: Is that Exhibit 146?

25 MR. SNELSON: We believe so.

1 THE CHAIRMAN: Now, it doesn't have page
2 numbers which is always a problem with an exhibit.

3 MRS. DeQUEHEN: This is page 2.

4 THE CHAIRMAN: Of whose submission, I
5 wonder.

6 MRS. DeQUEHEN: I see. This is part 1,
7 page 2 of introduction, right in the beginning.
8 Introduction 1-2, then it says part 1, 1-2. So it is
9 part 1, page 2.

10 Q. If we could just go to the middle of
11 the page, and it says the Commission goes on later to
12 say, some issues, about the acceptability of a
13 technology may be limited to a particular site, i.e.
14 thermal discharge, but others tend to transcend the
15 site and are common to all proposals related to a
16 particular technology. And then it gives radioactive
17 waste disposal.

18 Now, radioactive waste disposal
19 technology is presently undergoing environmental
20 assessment in the United States and is about to undergo
21 environmental assessment here after 1993; is that not
22 so?

23 MR. SNELSON: A. I believe the details
24 of that would have been discussed with Panel 9. I
25 understood that, at least the initial stages of the

1 processes were under way now. Just what the 1993 date
2 is, I don't know.

3 Q. However, in both cases a general
4 environmental assessment is being undertaken to
5 investigate the generic approvals for the technology;
6 could you confirm that?

7 A. I am sorry. Where was that comment
8 from?

9 Q. I am just reading from my notes. The
10 process which is being undertaken is a general
11 environmental assessment process. And involves generic
12 approvals for the technology.

13 MS. HOWES: A. I have a little
14 information about this. I think in 1993 is the
15 beginning of the concept approval, so that is a
16 agreement, or general agreement, that the concept of
17 deep geologic disposal is reasonable to pursue and the
18 next stage, I understand, would be a more specific site
19 selection stage.

20 Q. Now with regard to the general stage,
21 the environmental assessment criteria are very strictly
22 laid down. The technology must stand up to assessment
23 according to general environmental assessment practice
24 of worst case scenario analysis; is that not so?

25 A. I know that the guidelines for the

1 establishment of the EA are very extensive. I don't
2 know enough detail to answer the second part of your
3 question.

4 Q. Now, the purpose of worst case
5 scenario analysis, which is required if a technology is
6 seeking the generic approach, two stage approach, is in
7 order to ensure that the assessment is all inclusive,
8 such that it will include or account for or embrace all
9 environmental impact situations which might arise in
10 subsequent site-specific cases; is that not so?

11 A. I am not familiar enough with worst
12 case scenario analysis to answer your question.

13 Q. Would you not say that if you are
14 doing a general environmental assessment for generic
15 approvals, that this is the methodology that is
16 accepted?

17 A. I am afraid I cannot answer that. I
18 know that the disposal concept will be reviewed under
19 the federal environmental assessment process and I am
20 not familiar enough with the guidelines they have
21 established for the disposal concept EA to know whether
22 worst case scenario analysis is required. I just don't
23 know the answer to the question.

24 Q. Well, if you are doing a prior, a
25 first stage prior general environmental assessment,

1 must not the conditions be inclusive such that any
2 subsequent case will be included or catered for in the
3 first assessment, if it is not to be repeated and that
4 is why worst case scenario is done?

5 A. The reason I am having trouble with
6 your question is the consideration that all
7 eventualities are discussed during that broad generic
8 environmental assessment that you were describing and I
9 am not sure that in all cases every option or worst
10 case scenario that you have described are undertaken as
11 part of a broader generic EA.

12 Q. But would you not say that is
13 generally the purpose of a general assessment of a
14 technology and that is why it does not have to be
15 repeated in broader form?

16 A. Your questions are specifically about
17 an assessment of a technology? I am trying to think of
18 examples where Ontario Hydro might have undertaken this
19 and the only one that comes to mind is the
20 environmental assessment we did for flue-gas
21 desulphurization where we were looking at a specific
22 technology. I am not familiar with that EA to know
23 whether we did a worst case scenario analysis of this.
24 I would rather doubt it.

25 I know we looked at a number of

1 environmental parameters and some safety parameters,
2 but I don't know whether that would be the worst case
3 scenario analysis that you are describing.

4 Q. Would you not say there is a well
5 defined standard analytical procedure used in general
6 environmental assessments? The standard method, and
7 for a plant, the standard method generally involves
8 drawing concentric circles about the plant site, as
9 described in the Atlantic Nuclear Cost Effectiveness
10 Study, which is an exhibit at this hearing, and which
11 has been referred to many times.

12 The method consists in calculating
13 effects while carefully describing all assumptions, of
14 course, and analyzing the impacts in each sequential
15 geographical component. The effects, the impact of the
16 effects, are looked at, firstly, upon the natural
17 environmental, air, water, soil, biosphere, including
18 man, transference through the food chain; secondly,
19 upon a social environment from provincial, regional,
20 local, community aspects, including social impact
21 studies, such as loss of enjoyment of property
22 lifestyle, culture, concerns about health and safety et
23 cetera.

24 [3:05 p.m.]

25 Would you not say that there is a general

1 procedure in which there is this general method in
2 which environmental assessment is generally carried
3 out?

4 A. Definitely there is an identification
5 of a study area. As you have indicated, I am not sure
6 that it is standard practice to develop concentric
7 circles of effects, but that, I guess, is a
8 possibility.

9 But yes, identification of a study area,
10 identifying effects both natural and social
11 environment, yes, is standard practice for an
12 environmental assessment.

13 I am not familiar enough with the exhibit
14 you cited to know any more detail of the method than
15 what you described.

16 Q. If the occasion should arise and this
17 hearing is to be regarded as an environmental
18 assessment for the nuclear option and there is to be a
19 balancing and trade off of options and alternative
20 methods, do you think that you have supplied enough
21 detail and data to carry out a systematic environmental
22 analysis impact studies, cumulative impact studies, et
23 cetera, which will be required for a full environmental
24 assessment hearing?

25 A. I don't think we have ever professed

1 that we have enough detail in this particular plan to
2 address the systematic environmental information that
3 you have indicated.

4 We have always stated that should a
5 nuclear option be considered for a future major supply,
6 that a more appropriate site-specific project related
7 environmental assessment would have to be done with a
8 good deal more environmental data and site-specific
9 information.

10 Q. Would you agree that there is a -
11 which is more or less what you have agreed - that there
12 is essential information that is not available at this
13 stage? Perhaps I could just give a few examples, I
14 mean, these are just a couple of examples. With regard
15 to tritium oxide emissions Ontario Hydro has not
16 developed a regional dispersion model or made the
17 required measurements for such. It is necessary to
18 consider the cumulative effects of tritium oxide on the
19 environment.

20 The second example is Ontario Hydro has
21 not been able to supply any of the requested detail
22 with respect to release control methods. We therefore
23 are unable to accurately define the position with
24 regard to stacks, vents, ventilation practices,
25 filtration, vapour collection procedures. There appear

1 to be a lack of records. We have tried to define the
2 position with respect to the preliminary
3 standardization of methods but have not received the
4 essential information, et cetera.

5 Would you agree that this type of
6 detailed data information is perhaps not available at
7 this stage, or not available to the intervenors?

8 MR. B. CAMPBELL: Mr. Chairman, this
9 question has kind of changed as from its beginning to
10 its end.

11 If the question is, in effect amounts to,
12 would more detailed information be required at the
13 site-specific project application hearing which was
14 asking for approval to construct a facility at the end
15 of it, then that is fine. I thought that was where the
16 question started. When it finished I wasn't quite so
17 sure. It certainly is Ontario Hydro's position
18 obviously that it has brought sufficient information
19 before this Board for the approvals it is seeking here.

20 MRS. DeQUEHEN: No, that was not my
21 question. I was not referring and never did refer to
22 site-specific hearings.

23 I was referring to general environmental
24 assessment hearing of the technology and option. I
25 understand that Ontario Hydro is not asking for these

1 approvals but I also understand that some other party
2 may and hence I am just trying to define the position.

3 Q. Even for a critical analysis there
4 are some comparisons which you could surely have
5 carried through to a conclusion, for example, the
6 nuclear option results in a higher thermal discharge to
7 the lake, smaller temperature increments could have
8 critical cumulative impacts as much the same way as
9 global warming matters.

10 THE CHAIRMAN: I don't think these kind
11 of questions which deal with the nuclear technology
12 really should be being asked to these witnesses. Those
13 are matters which you and others dealt with in great
14 detail with the nuclear Hydro representatives who were
15 here on Panel 9.

16 I don't think any of these witnesses
17 would be able to comment about the matter such as you
18 referred to now and in your previous question.

19 This panel is basically dealing with
20 planning and it is not dealing with the intricacies or
21 the details of the characteristics of the various
22 options.

23 MRS. DeQUEHEN: Thank you. I am merely
24 asking --

25 THE CHAIRMAN: It's okay, it's fine, if

1 you ask another question, but don't ask about thermal
2 discharge because that's not something that they can
3 answer for you.

4 MRS. DeQUEHEN: I am trying to establish
5 the level of detail which is available.

6 THE CHAIRMAN: I think they have
7 answered, excuse me, just a moment. I think they have
8 answered that, perhaps not to your satisfaction. They
9 have said that when they come here at this hearing they
10 will give us the detail that they think is necessary to
11 deal with the approvals for which they are asking.

12 They recognize that if, for example,
13 there is going to be, at some future time, a hearing
14 with respect to a nuclear facility at a specific site,
15 they will have to bring in more environmental
16 information which will be relevant to that site, so
17 that whomever has to decide about that, will have that
18 in front of them.

19 I think that's what their answer has
20 been. I don't think that really they are prepared to
21 say much more than that, but I invite anyone who wants
22 to supplement that to do so. So I guess the answer is
23 nothing more.

24 MRS. DeQUEHEN: May I just clarify a
25 point?

1 THE CHAIRMAN: Absolutely.

2 MRS. DeQUEHEN: Thank you.

3 Q. I was just perplexed by your saying
4 specific site.

5 What I am trying to establish is whether
6 there is the information to do a general environmental
7 hearing should that option be brought forward by other
8 party?

9 THE CHAIRMAN: Their position on that is
10 that they certainly have not got enough information
11 before us today to establish the approval to put a
12 nuclear site at a specific place.

13 In the future, if they decide to ask for
14 that, they will have to then bring in additional
15 evidence.

16 MRS. DeQUEHEN: Mr. Chairman, would you
17 say that they have also responded and stated that there
18 is not the evidence to do a Stage 1 general
19 environmental hearing, not just a specific site? A
20 general environmental hearing on the nuclear option?

21 THE CHAIRMAN: I wouldn't try and purport
22 to answer that question. Maybe Ms. Howes can answer
23 that question.

24 MS. HOWES: Could you repeat the
25 question, please?

1 MRS. DeQUEHEN: Q. This is what I am
2 trying to establish. Would you say that Ontario Hydro
3 has supplied enough detailed data, done all the
4 required studies, such that a general environmental
5 assessment, Stage 1 general environmental assessment
6 could be carried out on the main supply options?

7 MS. HOWES: A. I am not clear what you
8 mean by general environmental assessment.

9 THE CHAIRMAN: Let me try it.

10 Suppose there had been no Update and we
11 were still back at the DSP and we were considering Plan
12 15 as the recommended plan, is there now enough
13 evidence from Ontario Hydro for us to have dealt with
14 the requirement and rationale for a plan with respect
15 to the nuclear portion of that plan?

16 MS. HOWES: I think generally, yes. And
17 I was going to list for you, if you would be helpful,
18 those exhibits which deal with the generic
19 environmental effects of a nuclear CANDU option, if
20 that would be helpful, because there are a number of
21 exhibits on file that would give you information on the
22 generic environmental effects of a nuclear station.

23 MRS. DeQUEHEN: Q. Well, in which case I
24 must then question you on the details because a certain
25 amount of detail is required, and all of the required

1 data must be there in order to do it. That's why I
2 have moved on to the details, so that you can establish
3 whether or not this detail is required for such an
4 assessment.

5 THE CHAIRMAN: But that was done in Panel
6 9. It was done by you and done by others. But you
7 might accept Ms. Howes' invitation for the list of
8 matters of where that material can be found, and then
9 when your turn comes to give evidence, you will have
10 that, you will know what Hydro's position is and you
11 can respond to it.

12 MS. HOWES: Would the exhibit list be
13 helpful?

14 MRS. DeQUEHEN: I have that.

15 Q. It has been said often in this
16 hearing that we are dealing with a dynamic situation
17 and planning cannot has been static concept.

18 Is it not true that environmental
19 consideration is a dynamic concept depending on the
20 current and ongoing research which is always only
21 approximation awaiting refinement and modification by
22 new data, so research is never absolute appear final.

23 Not only is research knowledge changing
24 very rapidly, but so is environmental sensitivity and
25 social preference. Therefore do you agree it would not

1 be prudent or in the best public interest to rule on or
2 rely on evidence for environmental decisions which
3 would have to be adhered to through the years from 1910
4 up to 1950?

5 I think I am saying should there not,
6 just as the planning concept should be open and subject
7 to flexibility, so should approvals, environmental
8 approvals?

9 MS. HOWES: A. I think your dates were
10 2010 and 2015?

11 Q. Yes. If we are planning ahead is it
12 not important that this process should be left open,
13 that we should not rule now on environmental approval
14 which might carry through for the next 25 years?

15 A. I agree with you that environmental
16 science is evolving and changing and as research
17 progresses we are getting new information. I think
18 that it has been our position that we are not seeking
19 approvals now for a period 2010 to 2015 in terms of
20 major supply.

21 Q. I'm sorry to repeat this. But your
22 position is - because you seemed to take the opposite
23 position at the beginning of my question - your
24 position now is that you have put sufficient detailed
25 evidence forward and all the evidence that is required

1 for generic approval of major supply options; is that
2 your position?

3 THE CHAIRMAN: No, that's not the
4 position, as I understood what Ms. Howes has just said.
5 She just answered your question about the dynamic
6 nature of the environmental issues as well as all the
7 other issues here. All that anyone can do is put
8 forward their best position at this moment, recognizing
9 that things will change.

10 MRS. DeQUEHEN: I am referring to this
11 moment, all the studies you could have and should have
12 done and all the data you could have and should have
13 produced.

14 THE CHAIRMAN: On that basis they say
15 yes, they have done that.

16 MRS. DeQUEHEN: And you say, I am not to
17 question them about the details of that assumption?

18 THE CHAIRMAN: You are not to question
19 them about the details of the technologies, hydraulic,
20 fossil, or nuclear, because they have been dealt with
21 in other panels by the people who know the answers to
22 those questions.

23 This panel is here to deal with the
24 planning process in general terms.

25 MRS. DeQUEHEN: I presume that this panel

1 is also here to deal with the environmental assessment
2 process.

3 THE CHAIRMAN: As far as process is
4 concerned, yes, but they have answered your questions
5 on that so for.

6 If you have got some new questions you
7 can ask them new questions. But they have answered
8 your questions up until now as best they can.

9 MRS. DeQUEHEN: So I cannot ask them
10 questions about the comparison between nuclear and
11 fossil and global warming and the details?

12 THE CHAIRMAN: You can ask them questions
13 as to preferences of one choice over another for
14 planning purposes, you ask them questions about that
15 and why they select one course of action over another.
16 You can ask them those kind of questions because they
17 fall within the planning. But to get into the details
18 with them of the nature that you were talking about a
19 few moments ago when you listed a catalogue of issues
20 dealing with the nuclear option, I don't think this
21 panel can answer those questions. Those questions were
22 dealt with in and earlier panels.

23 MRS. DeQUEHEN: Q. Mr. Snelson, in order
24 to make these tradeoffs and comparisons effectively, do
25 you not need to go into immense detail and have a great

1 knowledge of the details before you can do that?

2 MR. SNELSON: A. No, I think it is
3 impossible for any one person to know all the details
4 of all the technologies, of all the ways of producing
5 electricity or all the ways of saving electricity.

6 For planning it is important to have the
7 main characteristics of the options in mind that might
8 affect the way in which they would fit together into
9 plans.

10 Q. In order to do an effective
11 environmental assessment of the options, looking at the
12 environmental impacts, is it not necessary to have a
13 complete knowledge of different aspects and all the
14 details and all the data?

15 MR. B. CAMPBELL: Mr. Chairman, we are
16 right back where we were before. We take the position
17 that we have provided the Board with sufficient
18 information to support the approvals that we were
19 requesting and that it is perfectly adequate from any
20 reasonable environmental assessment test applied to an
21 application of this type. That is our position.

22 In the end, Mrs. DeQuehen may
23 disappear -- I'm sorry, may disagree, but that is a
24 matter for argument. We believe we have done way more
25 than enough.

1 MRS. DeQUEHEN: I shall disappear, I will
2 just ask one for question.

3 Q. I do understand that you are not
4 taking the position that you are asking for a full
5 environmental assessment, but I also understand that
6 other people may, you are supplying the information and
7 they may take that position. Now, in your opinion,
8 have you supplied sufficient detail for such a position
9 taken by some other party?

10 [3:27 p.m.]

11 MR. B. CAMPBELL: It is the same
12 question, Mr. Chairman, and it has been answered, and
13 the answer is yes.

14 THE CHAIRMAN: I think that is their
15 answer. As I say, you may not agree with it, but that
16 is their answer.

17 MRS. DeQUEHEN: I understand it is their
18 answer. I just think that they should then be required
19 to state exactly why they take that position and should
20 stand up to further questioning. However, thank you.

21 THE CHAIRMAN: Thank you.

22 Anyone else? I take it that nobody else
23 is here to cross-examine; is that correct?

24 Dr. Connell?

1 EXAMINATION BY DR. CONNELL:

2 Q. I thought that amongst other things I
3 would like to briefly revisit some of the issues of
4 avoided cost, which was the main subject of Panel 3.
5 The matter has come up a number of times since then and
6 I thought it might be helpful to have a retrospective
7 view of some of the issues.

8 It has occurred to me that what Hydro is
9 doing, through the avoided cost policy, is parallel in
10 certain respects to what private corporations would do
11 in due diligence when they are contemplating making an
12 investment or an acquisition or a purchase.

13 I wonder if any members of the panel have
14 any observations on that point. That is, in what
15 respects the circumstances or the process or the
16 outcome might differ in a public corporation and a
17 private one?

18 MR. SNELSON: A. Personally, I am not
19 familiar with the procedure of due diligence in a
20 private corporation, Dr. Connell. I don't know whether
21 anybody else on the panel is.

22 MR. LONG: A. I think perhaps what you
23 have in mind is looking at the internal rate of return
24 on investments?

25 Q. Yes.

1 A. I guess there is some parallel but in
2 using the avoided cost or in using the method of
3 economic assessment that Hydro does use, the intention
4 there is to solve the problem or to get a certain
5 outcome at the lowest cost, if cost is the only
6 parameter that you happen to be looking at. In a
7 private industry, I think one difference between Hydro
8 and a private industry, certainly in some instances, is
9 that the investments that we are looking at here, that
10 Hydro has to make, Hydro sees as being absolutely
11 necessary whereas in private industry there may be some
12 discretion. You have got a certain amount of money and
13 you want to invest it in those projects that are going
14 to generate the highest rate of return.

15 Q. Let me just postulate for a moment
16 that in the setting of a private corporation that those
17 responsible made either a misjudgment or a
18 miscalculation or that circumstances turned out
19 differently than they had forecast and that the return
20 to was considerably lower. Or possibly even that the
21 enterprise is unprofitable.

22 That, I suppose, could lead to the
23 corporation shutting down that venture or it could lead
24 to insolvency. It could be the end of the company
25 conceivably, if it was a very large investment. What

1 the consequences presumably in the case of Hydro, if
2 there were parallel circumstances, would be a higher
3 price for electrical energy.

4 A. I think one possible distinction
5 between Hydro, as it is currently constituted and a
6 private organization, is the existence of shareholders,
7 that they are the ultimate risk in the company.

8 In the case of Hydro, it is the
9 ratepayers that bear the ultimate risk. If decisions
10 are made that eventually turn out to be not the best,
11 then the costs of those decisions will be passed on to
12 customers. Whereas, in a private industry they may be
13 borne by shareholders.

14 We see this, in fact, in the utility
15 industry in the United States, where we have things
16 such as prudence hearings or prudence disallowances for
17 certain utility capital that the regulators disallow
18 from being added to the rate base. And there it is the
19 shareholders of the utility that bear that risk.

20 Q. If you consider the whole universe of
21 private investors they are going to be extremely
22 variable in their attitude to risk. But in general, do
23 you think a public utility ought to be more
24 conservative than the typical private investor or more
25 adventuresome in making investments?

1 Do you think the public utilities should
2 take risks that very few private investors would
3 contemplate or the other way around? Does Hydro have a
4 policy?

5 A. I am not sure that Hydro has a
6 policy. I have, I think, a view, a personal view. I
7 think traditionally they have tended to be fairly
8 conservative. But certainly, I think in some ways a
9 publicly-owned utility can afford to take some of these
10 risks, enter into areas that perhaps private utilities
11 would be wary of. I think that comes back to the
12 question of who bears the risk.

13 Q. The public utility doesn't have a
14 sense of itself standing on the edge of an abyss the
15 way some private corporations do from time to time?

16 A. I am sure there are a variety of
17 views on even that question.

18 MR. SNELSON: A. Dr. Connell, I think
19 one aspect that is perhaps related to this, is that
20 sometimes a public utility has the ability and perhaps
21 the duty to take a longer-term view of an investment
22 than a private company might do in terms of
23 establishing infrastructure and looking at it over the
24 long term rather than insisting that an investment pay
25 off after two or three years.

1 I don't see that necessarily as
2 addressing specifically risk, it is more a question of
3 the time frame over which an investment might be
4 evaluated and looked at.

5 Q. I think that is a helpful
6 observation.

7 MR. SHALABY: A. One added observation
8 perhaps, is the perspective that the utility makes the
9 investments typically from a society perspective rather
10 than from its own bottom line or the entity that we
11 look at, for example, in demand management, is not
12 Hydro's profit or bottom line, but rather the societal
13 perspective of it.

14 Hydro and its customers are better off if
15 this investment is made. We would make different
16 investments if we insisted that Hydro be better off, if
17 this investment was made.

18 Q. Let me come a little closer to the
19 theme of avoided cost. I think in Panel 3, and
20 subsequently, we have encountered a number of occasions
21 or instances or circumstances in which the potential
22 for variability in avoided cost was emphasized or the
23 potential for variability in a real outcome.

24 Now amongst these, I would enumerate
25 first the inherent variability in the major inputs to

1 avoided cost. The discount rate of cost of
2 construction and equipment and OM&A and fuel and so on.
3 They seem to share the usual variability that one
4 observes in economic and industrial forecasting.

5 [3:37 p.m.]

6 Then there were a whole set of factors
7 that have been cited in the course of your direct
8 evidence and cross-examination of a rather technical
9 nature, in which there were some problems that had to
10 be smoothed over, some judgments that had to be made in
11 every case, I am sure reasoned judgment, but perhaps in
12 some cases some arbitrary quality to them. The issue
13 of insurance for nuclear plants, the issue of
14 allocation of R&D, the issue of treating heavy water as
15 sunk costs. There really is a very long list of such
16 matters, corporate municipal taxes, capital cost
17 allowances, the way you handled transmission
18 allowances. The matter of staging of nuclear plants
19 came up fairly recently.

20 I am sure that if I prompted you to do so
21 you could come up with several dozen instances of
22 judgments that you and others have had to make.

23 And then there is a third class which I
24 would call a deliberate bias where Hydro has introduced
25 a judgmental factor into avoided cost of which is the

1 10 per cent preference premium is the single most
2 outstanding example. But I believe others have been
3 cited along the way too. I think there was one passage
4 that I gave reference to Mr. Snelson, in which you
5 cited --

6 MR. SNELSON: A. I believe I did in my
7 Panel 3 direct evidence.

8 Q. Yes. And going just one step
9 further, there was a recent passage from Mr. Shalaby
10 that I thought was quite relevant.

11 In 156, starting at 27268, it's the
12 passage in which you were about talking customer
13 service, Mr. Shalaby.

14 MR. SHALABY: A. Yes, I have it.

15 Q. Just the concluding part beginning on
16 27631, line 22:

17 All I am indicating here is that a
18 strict listing of things one, two, three,
19 strict interpretation of every word to
20 every situation, these principles apply
21 generally, apply most of the time, but
22 life is more complex than a list of
23 things and more complex than a strict
24 algorithm of you will do this and only
25 when you are finished you will check

1 again and you will do that and so on.

2 It's not a strict algorithm like that.

3 I am not sure that you were thinking
4 about avoided cost in that context, but it seemed to me
5 generally applicable that there are circumstances that
6 you examine in looking at a subject like demand
7 management in which you may sometimes override
8 judgments, rather than basing them on a very strict
9 application of avoided cost, you might apply judgment
10 because of broader considerations of the well-being of
11 customers or the Corporation.

12 Perhaps I should just stop there and ask
13 if I have fairly represented the uncertainties, the
14 variabilities that go into the calculation and
15 application of avoided cost?

16 A. I think that's a fair
17 characterization. It doesn't distill it to crystal
18 clear type of -- amenable to a final conclusion, but it
19 is a subject that is full of judgments. I am pleased
20 that we were able to present our case in a way that
21 relayed that understanding. I think that's a fairly
22 thorough understanding of the issue.

23 Q. Let me go on then to a little more
24 exploration.

25 I think you did give us some

1 sensitivities, these were set out in Interrogatory
2 3.7.83. I don't have the exhibit number with me, but
3 perhaps one of you has it?

4 I found this in Exhibit 190 which was the
5 CEG collection of background materials. I will just
6 pick out one to make the point. This is the
7 sensitivity to discount rate which is in table 3. I am
8 not sure if the one I am looking at was an original
9 Hydro publication or this was rewritten, re-edited by
10 CEG, but in any case, I trust that the data are as you
11 presented them.

12 This tabulation looks at the sensitivity
13 of avoided cost to variations in the discount rate of
14 plus or minus 1 percentage point. The lower rates and
15 higher rates are presented for the 10 years from '94 to
16 2014. Sorry, that's 20 years. And for the 20 years
17 from 2004 to 2024. The differences depend, of course,
18 on the capacity factor, but just take the
19 non-dispatchable NUGs, it goes from minus 2 to minus 5
20 per cent for the lower rate, and plus 2 to plus 6 per
21 cent for the higher rate. If you go down to the bottom
22 of the table the highest swings are for 10 per cent
23 capacity factor, as deep as minus 8 and minus 17 per
24 cent, and plus 8 and plus 19 per cent.

25 That really is simply a reminder that the

1 leverage of the discount rate is very substantial.

2 A. It is. I think this is the
3 sensitivity to the real discount rate. Real discount
4 rate varies less than of course the nominal discount
5 rate.

6 Q. That would be a bigger swing?

7 A. Yes.

8 Q. Thank you for that.

9 A. But it is sensitive and the lower
10 capacity factor is more sensitive because it is more a
11 function -- it's more sensitive to capital investment.
12 The higher capacity factor is sensitive to both capital
13 investment and fuel costs.

14 So the more dependent you are on just
15 capital investment, which is a lower capacity factor,
16 the more sensitive you will be to discount rate
17 variations.

18 Q. Now, I think I am right in saying
19 that you have never presented us with an estimate of
20 the uncertainty in avoided cost calculation, have you?

21 A. Exhibit 85 had a cumulative
22 probability distribution.

23 Q. Yes, you did show us that, cumulative
24 probability, that's correct. I remember that.

25 A. This is the closest we have come to

1 describing the probability contribution. And I think
2 Dr. Halpern in his Exhibit 700, I think it is,
3 discussed that particular distribution.

4 Q. Yes, how could I forget that, I
5 remember it very clearly now.

6 A. Expressed opinions on whether it
7 really captures all the uncertainty or it does not
8 capture all the uncertainty.

9 Q. Right. Well, where this brings me to
10 is just then to put to you the general question, are
11 there any serious alternatives to the avoided cost
12 methodology as you approach the evaluation of NUGs and
13 demand management and other possible supply options?

14 A. There is the alternative that we
15 discussed in various panels and that is a bidding, the
16 option of let's not try and guess what Hydro can do the
17 job for, which is roughly the avoided cost philosophy,
18 but let's compare one non-utility generation option to
19 another, and one demand management option to another,
20 and one demand management option to one non-utility
21 generation option. Almost assume that the utility
22 participation is not the very first determinant of what
23 options gets acquired or get accepted. The first
24 determination would be competition between the options
25 being offered to the utility.

1 The second level along the same lines is
2 to have the utility itself put bids to build
3 generation, and either the utility itself or
4 subsidiaries of the utility would be a participant in
5 that bidding process.

6 So I think the generally the bidding,
7 competitive bidding is an alternative to try and
8 calculate what the avoided costs will be.

9 Another approach that some utilities
10 used, and not necessarily utilities, I think more
11 utility commissioners, is an arbitrary -- I like what
12 you described, a reason, an arbitrary number, if you
13 like. New York for the longest time had a figure of 6
14 cents per kilowatthour. They mandated that any options
15 below 6 cents per kilowatthour would be accepted by
16 their utilities.

17 So they heard all the evidence about
18 calculations and about methods and about uncertainties
19 and concluded that to spare everybody all the agonies
20 of details and numbers and changes, they would pick a
21 number and stick to it for a number of years, and
22 that's what we did. They said, we heard it all, it's
23 very messy, let's stick to a simple number.

24 The trade offs between the rigour and
25 accuracy, they preferred the simplicity to the rigour

1 and accuracy, and many other jurisdictions had to weigh
2 the simplicity versus the detail.

3 So those are the two methods, one is
4 selecting a number after hearing a lot of evidence, and
5 competitive bidding.

6 Q. The citation that I picked up on
7 competitive bidding, I think there were several
8 references but in Volume 71, beginning on 12939, Mr.
9 Vyrostko was discussing competitive bidding with Mr.
10 Shepherd. Page 12940, the question was, line 16:

11 You have testified that you think the
12 time is getting there, that you should be
13 doing competitive building; right?

14 ANSWER: I think there are a number of
15 indicators suggesting that we should be
16 looking at it, that is correct.

17 Would any member of the panel like to
18 venture a guess as to how soon competitive bidding will
19 be in place?

20 MR. SNELSON: A. No, I don't think we
21 could venture a guess.

22 I would like to comment that I think that
23 the competitive bidding process is much simpler and
24 easier to manage for non-utility generation options
25 than it is for demand management options because the

1 options are offered by substantial industrial concerns
2 who know what they are offering and have a limited
3 number of offers to deal with.

4 If you get into demand management bidding
5 then you have the question that you are dealing with
6 many hundreds of thousands if not millions of
7 end-users, and each end-user isn't going to bid his
8 refrigerator or whatever in the process, so you are
9 going to have to have intermediate concern in between
10 that would manage the bidding process and manage the
11 savings.

12 So bidding will come sooner for
13 non-utility generation then it will come from demand
14 management, if it ever comes to demand management. But
15 I don't think we have a specific schedule to introduce
16 bidding, but we have looked quite favourably on the
17 process at various time and it may come in.

18 Q. With respect to demand management,
19 has Hydro ever issued a call for proposals for demand
20 management from the private sector?

21 MR. SHALABY: A. Not in the sense of
22 bidding for demand management.

23 But I would like to think of our programs
24 for guaranteed energy savings, for example, that the
25 energy service companies could come to Hydro and say,

1 we would retrofit this building and get paid once we do
2 the job and once the savings have been achieved. It's
3 almost be mini bids, but not in the sense of
4 competing -- we don't put one against the other and
5 make a choice. So it's almost an open solicitation,
6 anybody who can cross that level is in and we will
7 accept his bid.

8 Q. But I presume it's conceivable that
9 you might find new enterprises operating regionally or
10 across the whole province which would tender on
11 packages of demand management?

12 A. Yes.

13 Q. Has that worked in other
14 jurisdictions?

15 A. It been tried in other jurisdictions.
16 The jury is out on whether it's effective or not.
17 There are mixed opinions as to its effectiveness.

18 I think Hydro's opinion is that it is not
19 effective at this time. The troubles outweigh the
20 benefits at this time.

21 Q. Just turning to your other option,
22 Mr. Shalaby, the fixed number. Let me imagine for a
23 moment that you decide to abandon a rigorous adherence
24 to avoided cost, but yet do you need a number to deal
25 with these options.

1 Let's suppose that you and Mr. Snelson
2 and a few other knowledgeable people sat down and
3 thought about it, you looked at all the data, then you
4 come up with a number that you think will likely give
5 you outcomes that are widely considered to be
6 desirable, let's call it the Snelson number or the
7 Shalaby factor, or what have you.

8 Do you think that the number you would
9 come up with would be inferior to the avoided cost, the
10 system incremental costs that you now use?

11 A. I think it will be inferior because
12 the rationale for it has to be available.

13 I feel that it has value when it's
14 mandated by a third party that listens to what the
15 utility says and what the intervenors says and then
16 says, out of all that evidence that we hear, we feel
17 simplicity has got an advantage and we will simplify
18 the world into three categories, load capacity factors
19 will get this many cents and high capacity factors will
20 get that many cents, long contracts will get this much
21 and short contracts will get this much.

22 When simplicity and understandability is
23 a premium, that method might have an advantage. But I
24 think speaking for myself and as planners generally, I
25 think we don't mind the complexity. We invent half it

1 so we are comfortable with it, but I think we have a
2 job of explaining to people what the complexity is and
3 why it is contributing to a better decision.

4 Q. It's taken several hundred pages of
5 testimony and --

6 A. I am a proponent of simplifying
7 things and I think we probably reach a peak of
8 complexity in these numbers.

9 I think there is merit in simplifying
10 matters and making simplifying assumptions.

11 Q. Well, I am going to leave avoided
12 cost unless anyone has any last words.

13 I will turn to...

14 MR. SNELSON: A. I would just like to
15 add that there are drawbacks to a single number if one
16 is required to buy everything that is available at that
17 number, because if the number is set too high then you
18 could very well be in the position of having more
19 facilities offered to you than you need.

20 And so it still doesn't remove the need
21 for some form of management of the demand and supply
22 balance of the system. Bidding has some advantages in
23 that regard in that one can set the number of megawatts
24 that one thinks one needs to contract for at this time
25 and then use that as one of the parameters of the

1 bidding process, that one will accept up to this number
2 of megawatts the best bids that are received according
3 to whatever criteria are set for the bidding process.
4 [4:00 p.m.]

5 DR. CONNELL: I would like to turn to
6 transmission planning. The reference here is 102,
7 beginning at 17884. Mr. Starkman was questioning Dr.
8 Macedo. At the beginning of the page, Mr. Starkman
9 said:

10 "QUESTION: I would just like to move
11 to really the only issue I wanted to ask
12 questions on which is the integrated
13 planning approach or the planning
14 approach that Ontario Hydro takes to
15 transmission and generation...I take it I
16 am correct that Ontario Hydro says it
17 uses an integrated planning approach;
18 would that be accurate?

19 "DR. MACEDO: A. That is correct.

20 "QUESTION: Dr. Macedo, does that mean
21 that the people who plan the transmission
22 facilities interact with the people who
23 are planning the generation facilities to
24 work out what the best long-term plan is?

25 "ANSWER: Yes, I would say that."

1 And further over, page 17894:

2 "QUESTION: I take it you didn't..."

3 This is line 7:

4 "I take it you didn't do any analysis
5 of the effects of the reintegration on
6 the transmission?

7 "ANSWER: That's correct, on the
8 whole plan, no.

9 "QUESTION: All right. But do you
10 have any analysis of the effect of
11 Hydro's proposed reintegration on
12 the transmission plan that you are
13 presenting to the DSP?

14 Dr. Macedo:

15 "ANSWER: Like Mr. Huggins, I haven't
16 got a copy of the reintegrated plan."

17 I don't believe this has come up
18 previously in the cross-examination and I thought it
19 was an issue that seemed to me to be left open at the
20 time of this exchange.

21 I wonder if any members of this panel
22 have any comment; if you see that issue in a different
23 light from the light in which Dr. Macedo apparently saw
24 it at that time?

25 I think he was saying that he and his

1 staff really did not play a significant part in the
2 Update and Mr. Starkman was clearly perplexed by this
3 and was suggesting by his questions that this did not
4 look like integrated planning.

5 MR. SNELSON: A. I believe that the
6 transmission implications, for instance, Exhibit
7 442.13, which I believe was an answer to an undertaking
8 that was given to you, Dr. Connell, to revise the
9 estimates of generation that could be added in
10 different parts of the province respecting the main
11 interfaces and to provide more detail of that.

12 I believe that is up-to-date and that it
13 includes the effects of reintegration, and that in
14 addition to that, the evidence that we have presented
15 on costs has had built into it the effects of the
16 reintegration on transmission, and so the transmission
17 effects have been captured.

18 The integration of transmission and
19 generation is something which is difficult to do in a
20 generality where one is not being site specific because
21 the transmission considerations tend to be very
22 dependent upon the particular siting of generation and
23 generation options.

24 So, allowances for cost are made,
25 judgments are made as to whether, in fact, illustrative

1 siting can accommodate the range of options that is
2 being looked at in a generation plan. So that sort of
3 thing is done.

4 Where the closest integration between
5 transmission and generation planning takes place is
6 actually in the site selection process for generation
7 alternatives. In that particular phase of planning,
8 which is really another step down the road from where
9 we are today, then at that stage, transmission
10 considerations are quite likely determining variables
11 as to what is an appropriate area of the province to
12 seek a site in or not to seek a site in, recognizing of
13 course that there are many social and environmental
14 factors that affect that, too. But from a technical
15 planning point of view, transmission is often the most
16 important variable when we get to site selection.

17 THE CHAIRMAN: All right perhaps we
18 should take we a break. We have some more questions
19 but we will take a break and come back.

20 We will recess for 15 minutes.

21 THE REGISTRAR: Please come to order.
22 This hearing will recess for 15 minutes.

23 ---Recess at 4:05 p.m.

24 ---On resuming at 4:15 p.m.

25 THE REGISTRAR: Please come to order.

1 this hearing is again in session. Be seated, please.

2 THE CHAIRMAN: I can't tell whether Hydro
3 is turning back the clock or putting it forward.
4 Which is it? [Laughter]

5 MR. SHALABY: Both.

6 THE CHAIRMAN: That's another example of
7 flexibility, I guess.

8 DR. CONNELL: If I still have the floor,
9 Mr. Chairman.

10 Q. Just a wrap-up question about Exhibit
11 442.13.

12 Incidentally, I thought this was an
13 excellent expansion of the original table 8, the added
14 detail and clarity is very satisfactory. There is
15 clearly accommodation in this transmission plan for
16 substantial additions to the NUG program. These are
17 probably in excess of the requirements that you can
18 envision between now and the year 2000; is that
19 correct?

20 MR. SNELSON: A. Yes. And during the
21 preparation of the Update, then the need to maintain a
22 capability on the transmission system was communicated
23 to the senior management by the transmission system
24 planners as part of the general considerations of what
25 planning around the median would mean. So that view

1 was taken into account during the preparation of it.

2 Q. There has been no change in the
3 prospective schedule for this plan since Panel 7?

4 A. Not to my knowledge. And the plan is
5 to proceed with at least the approvals to enable this
6 to proceed. Decisions on the actual construction will
7 be made on an as-required basis, which as I indicated
8 in my direct evidence shortens transmission lead times
9 to more closely match lead times of non-utility
10 generators and other short lead time generation
11 operations.

12 Q. Thank you. My next subject is
13 nuclear costs, and I want to go to transcript 135,
14 beginning at 23784. This is a view that Mr. Penn
15 stated in Panel 9, on perhaps two or three different
16 occasions and I have picked out perhaps the most
17 thorough and forceful exposition of his view. This
18 really focuses on nuclear plant of the future and the
19 possibility of meeting the kind of budget forecast
20 which has been implicit in the plan.

21 Perhaps beginning on 23786, line 18:

22 I think what my view of what I meant
23 there was of a will to do it, is that
24 it's well-known in the world today, and
25 there have been major studies done in all

1 key countries, France, Japan, United
2 States and certainly here in Ontario,
3 because I was party to the suggesting
4 that if you want to gain the greatest
5 confidence in reducing the schedule to a
6 minimum and the cost of a major project,
7 then it is important to do a number of
8 things.

9 What I meant by the will to do it, you
10 have to the will to say, yes we will do
11 as much engineering as is possible prior
12 to constructing the plant so that the
13 people charged with that responsibility
14 know what it is they are going to build.

15 The next thing you have to have the
16 will to say, and once we have started
17 building it we won't stop building it, or
18 we won't have any delays while we build
19 it, because that leads to the lowest cost
20 and the greatest benefit over the whole
21 period from which you gain benefit from
22 these assets, and that's really what I
23 was talking about.

24 I would be interested to have the
25 planning perspective of this view of Mr. Penn's. I

1 dare say you would agree with the general proposition,
2 but I would be interested in your comment on the
3 feasibility.

4 Is it likely that a project on the scale
5 of Darlington could be undertaken in the future that
6 would meet the specifications that he has set out here
7 and have none of the uncertainties that have set back
8 the schedule at Darlington?

9 A. He obviously has a particular view
10 about how much design work should precede the
11 construction, and clearly as a planner I can't -- I
12 defer to his expertise in that particular area.

13 With respect to delays, which he also
14 talks about, to achieve the lowest cost then you need
15 to carry through from beginning to end without delays,
16 then certainly from a planning perspective, that is the
17 way in which we would expect to be able to achieve the
18 lowest cost plant.

19 There are circumstances that can arise,
20 and did arise in the case of Darlington, where the
21 choice was to continue with the plant on a slower
22 schedule or not to continue with the plant at all, or
23 to continue on an advanced schedule even though this
24 output was not expected to be needed.

25 In that case there is a balance that has

1 to be reached, and I am not sure whether we have
2 reached the right balance or not, but you have to
3 balance the diseconomies of delays versus the
4 advantages of better matching supply and demand.

5 As to whether we do that in future, then
6 I think that this comes back to Mr. Penn's expression
7 of having a will to do it, which I think is also
8 paraphrased, if you like, as having a clearly defined
9 societal need to do something. If you really believe
10 that it is needed and that's accepted, then I think
11 that it is possible to do that in the future as it has
12 been done in the past. Pickering "A", for instance,
13 and some of the other stations, were really built on
14 quite an efficient schedule.

15 I don't see any reason, if the
16 circumstances were right, and they may not be right at
17 the moment, but if the circumstances were right in the
18 future, then I don't see why we can't achieve what we
19 were able to achieve in the past.

20 Q. Yet, in spite of best efforts on the
21 part of Hydro, if some unforeseen circumstances came up
22 that created a temporary imbalance, an excess of
23 supply, it simply might not be prudent to follow the
24 Penn formulation; is that correct?

25 A. That is correct. One way in which

1 that can be handled from a planning point of view is
2 that the long lead time option which requires
3 continuous activity over its full period to bring to
4 success could perhaps be planned to meet the need that
5 you have a very high degree of confidence will be there
6 in the future and needs that you have a lesser degree
7 of confidence about, one could rely upon shorter lead
8 time options.

9 So there are ways in planning of planning
10 to achieve a good mix between long lead time low cost
11 options and shorter lead time high cost options, and in
12 that case you will plan for the need you are very
13 confident of with the long lead time low cost options
14 and you would plan for some of the additional
15 requirements to be met with things that have more
16 flexibility, to provide overall flexibility to the
17 plan.

18 Q. You would not, however, advocate an
19 approach to management which would deprive executive
20 officers of exercising their best judgment in whatever
21 circumstances came up because of adherence to a
22 particular formulated approach, I take it?

23 A. I think decisions always have to be
24 based on the best information available at the time and
25 one wouldn't want to put unnecessary constraints on

1 subsequent management decisions.

2 Q. I would like to turn briefly to 148,
3 Mr. Snelson, where you were quoted page 26229. This
4 comes back to the issue of the choice of major supply,
5 which has been on the table before today.

6 In the context of this discussion, let's
7 pick it up on 26230, at line 13:

8 With today's circumstances there is a
9 very different set of views from a
10 planning perspective. The first and most
11 important point is that the need for
12 major supply has shifted off under median
13 load growth to a time that is far enough
14 off into the future that we don't need to
15 make a decision now. We can afford to
16 wait. And therefore, it would be bad
17 planning to make a decision before a
18 decision is required.

19 I don't we need any more elaboration of
20 that view. But what I would like to do is just ask you
21 to comment in the light of that observation about page
22 32, of Exhibit 452, the last two bullets:

23 What is the appropriate role of fossil
24 generation?

25 And in the next one:

1 What is the appropriate role for the
2 nuclear option?

3 I would assume that what is sauce for the
4 goose is also sauce for the gander, that what is bad
5 planning on your part would also be bad Board
6 decision-making on our part if we strayed into this
7 difficult terrain prematurely.

8 Is there anything that you think this
9 Board can offer with respect to the appropriate role
10 for the nuclear option and the appropriate role for the
11 fossil option that would not violate your precept and
12 yet would contribute to the public understanding of
13 this issue?

14 A. I think we have explained or outlined
15 the matters that you will have to address. As I
16 understand the legal interpretation from the lawyers of
17 the Environmental Assessment Act, in order to give us
18 the approvals that we are requesting, that the nuclear
19 and fossil alternatives have to be examined at least in
20 the light that they are alternatives to or alternative
21 methods, depending on the classification, the approvals
22 requested.

23 As regards going beyond that, then I
24 think we are as planners would find expressions of
25 views in that area of interest.

1 As Mr. Campbell has indicated, that we
2 don't expect that to have legal force in any subsequent
3 process, but it may have some value in the area of the
4 public debate with respect to these options. It's hard
5 to speculate what form that might take, but it might
6 take the form of a discussion of some of the factors
7 which would come into play in making such a decision in
8 the future. We certainly are aware to some degree of
9 the factors that we would use in coming to that
10 decision in the future and that might be helpful to us.

11 Q. Just for example, suppose that after
12 listening to all the intervenors' cases and the
13 argument, that we eventually came to the conclusion
14 that has Hydro has got it exactly right, that
15 everything that you have said about fossil and nuclear
16 is right on target, that we accept your evaluation of
17 environmental impacts and risks and costs, the whole
18 package, would that kind of finding on our part advance
19 the cause of electric power planning in Ontario, or
20 would it just leave you exactly where you are now?

21 [4:30 p.m.]

22 A. I think it would advance us. I find
23 it somewhat flattering to think that you might find
24 that everything we have said is in line precisely
25 with -- [Laughter]

1 But for instance, I think that we have
2 taken the view that nuclear safety matters are being
3 dealt with satisfactorily and that is, that nuclear is
4 an option, it is an available choice in the future. I
5 think that finding that in your hypothetical, extremely
6 hypothetical situation, that everything that we had
7 presented was satisfactory and in line with your own
8 views, would provide support for that view, an
9 important support for that view and in other matters
10 too.

11 Q. Thank you. I just have one last
12 question. This concerns government/Hydro
13 relationships. It seems to me that these are of two
14 kinds, perhaps I should say of least these two kinds.
15 One concerns the general environment for electric
16 power, planning, and management. Which, of course,
17 includes the whole broad domain of energy policy. But
18 it also includes environmental policy and financial
19 policy, and regional development policy and so on.

20 And clearly, you have learned to work and
21 to plan in that environment, to anticipate
22 developments, to prepare for them insofar as you are
23 able to and to adjust where necessary. Then there is
24 another aspect of the relationship in which they are
25 quite explicit government interventions of which you

1 have seen examples of at least four, the nuclear
2 moratorium, the nuclear fuel purchase arrangements, the
3 Smoky Falls transaction and the Patten Post
4 acceleration. There may be others that don't come to
5 mind.

6 Those are interventions that have usually
7 a short lead time. In those cases you haven't had much
8 warning that they were coming.

9 In each case, in most cases, they don't
10 have a great deal to do with producing reliable power
11 at low cost and low environmental impact, they have to
12 do with a variety of other social and financial and
13 political issues that the government is concerned with
14 and has had recourse to Ontario Hydro as an instrument
15 of bringing about a desirable outcome.

16 What I would like to ask is how do you
17 take such factors as those into account in planning.
18 And perhaps, let us know whether you consider them to
19 be major perturbations, and whether you think that such
20 perturbations are likely to continue in the future?

21 A. I will answer the second part of your
22 question. And that is that I can't believe that
23 governments will now stop and forever hold their hand
24 from giving specific policy direction to Ontario Hydro.
25 I expect that more or less, and different governments

1 may have different styles, but I expect that there will
2 be government direction at times to Ontario Hydro.

3 From a planning point of view, with
4 respect to how we accommodate these changes, then
5 generally the policy directions that are received are
6 within the realm of things that are under
7 consideration. They are not generally from completely
8 out of left field.

9 For instance, the policy direction that
10 was received to proceed to speedy environmental
11 assessment for some hydraulic projects in the new
12 energy directions that at that time was Little Jackfish
13 Mattagami Redevelopment and Niagara. Those were the
14 projects that we were seeking to move forward with at
15 that time, in any case, so that was a confirmation and
16 support, if you like, for a direction we were already
17 moving in.

18 The Smoky Falls agreement, I think,
19 again, was a situation where we saw that it made good
20 sense from a power system planning point of view for
21 Ontario Hydro to buy the Smoky Falls generating plant
22 and redevelop it in step with the plants that we
23 already owned on the Mattagami River.

24 So the government's intervention was more
25 in the direction of accelerating something that was

1 already under way. If you were to go through the
2 others I think you would find that they were pushes to
3 Ontario Hydro withing the realm of things that
4 generally made sense from a planning perspective.

5 As regards to Elliot Lake, then clearly,
6 that was a matter that was central to Ontario Hydro, in
7 that Ontario Hydro was one of the main contractors for
8 uranium from the Elliot Lake mines and Ontario Hydro
9 was trying to find ways of moving towards lower cost
10 uranium supplies from Saskatchewan. So it was kind of
11 appropriate that the governments way of dealing with
12 that should also involve Ontario Hydro.

13 Q. Do you think that the approvals that
14 come out of this hearing will of course be subject to
15 the possibility of appeal to the Cabinet. But let us
16 suppose that there is no appeal or that any appeal is
17 not successful, the approvals will then be in place
18 with whatever conditions are attached.

19 Do you think that because of the role
20 that this Board has had and because of the status of
21 its report, that the implementation of the plan will be
22 less subject to modification by government action than
23 might otherwise be the case. What I am really asking
24 indirectly is, is Hydro, in fact, fully accountable?
25 Can we assume that approvals, once given, will be

1 implemented?

2 A. Well, I think that approvals that are
3 given, I believe the proponent still has the option of
4 exercising those approvals or not.

5 Q. Indeed.

6 A. Going back to your question about
7 government intervention, I think this is a very
8 difficult area. But a report by an independent body,
9 having heard a great deal of evidence, I think carries
10 quite a lot of weight in considerations, and I believe
11 that that would probably have some influence on
12 government. More influence, than say, certainly a
13 great deal more influence, than merely an opinion
14 expressed by Ontario Hydro, which is seen as being a
15 more narrow-based opinion. I see this as a very
16 broadly based process and report, I believe, would have
17 a lot of credibility because of it that.

18 Q. So you believe then, that Hydro, the
19 Board, the senior management, represent a fully
20 effective and responsible agency as we would expect any
21 other proponent in an environmental assessment hearing,
22 to be effective and accountable for implementation?

23 A. Yes, I believe so.

24 Q. Thank you.

25 EXAMINATION BY MS. PATTERSON:

1 MS. PATTERSON: Q. I have a question for
2 Mr. Snelson. It is really in two parts.

3 Can you describe how alternatives to the
4 undertaking were considered in your planning process
5 and what you considered to be alternatives to the
6 undertaking?

7 MR. SNELSON: A. Are we making a
8 distinction between alternatives to and alternative
9 methods?

10 Q. Yes.

11 A. That is an area where, in my
12 understanding, the lawyers have a lot of debate as to
13 what constitutes an alternative to and an alternative
14 method. It is not a distinction that we, as planners,
15 keep very clearly in our minds. As planners, we feel
16 it is necessary to ensure that our processes have
17 considered all the alternatives. And whether they
18 become therefore classified as alternative to or
19 alternative methods. It is something we don't concern
20 ourselves too much with, as long as we make sure that
21 we have covered, through our planning in the various
22 stages. The broadest range of alternatives that we can
23 come up with for dealing with the purposes of the
24 undertaking.

25 [4:40 p.m.]

1 Q. Then I wonder whether you have read
2 page 5 of the Government Review, Exhibit 146 which
3 says - and I am really asking for your comment on this:

4 There has been no use of the label
5 "alternatives to the undertaking" in any
6 of the submitted documentation. As
7 described in chapter 14 of the DSP
8 report, Hydro did consider various major
9 supply options some of which were
10 rejected for inclusion in the
11 Demand/Supply Plan for various reasons
12 including their environmental effects.
13 By considering those options Hydro in
14 effect considered alternatives to the
15 undertaking.

16 A. The only comment I would make is that
17 I think that our total consideration of alternatives
18 goes way beyond just major supply alternatives. We
19 looked at demand management, we looked at alternative
20 energy options such as solar and wind. So I think we
21 have looked at a very broad range of alternatives,
22 including the ones mentioned here but going beyond
23 that.

24 MS. PATTERSON: Thank you.

25 THE CHAIRMAN: I have no questions.

1 Mr. Watson? You are going to remind me
2 about keeping open the cross-examination; is that it?

3 MR. R. WATSON: No, Mr. Chairman.

4 There was one other point though, you
5 recall near the conclusion of Mrs. DeQuehen's
6 cross-examination, she and Ms. Howes had an exchange
7 about the information before the Board with respect to
8 major supply approvals, and Ms. Howes volunteered a
9 list of exhibits with respect to that. I would suggest
10 that that should be put on the record. I would
11 certainly like to see it.

12 THE CHAIRMAN: Mrs. DeQuehen declined the
13 invitation on the basis that she already knew what they
14 were.

15 But perhaps, Ms. Howes, if you could do
16 that for us, that would be helpful.

17 MR. R. WATSON: Thank you, Mr. Chairman.

18 MS. HOWES: As soon as I find the piece
19 of paper with the numbers on it.

20 MR. B. CAMPBELL: My recollection, Mr.
21 Chairman, was that it was in relation to matters
22 nuclear, not major supply generally.

23 MS. HOWES: Yes, it was nuclear.

24 THE CHAIRMAN: Yes, it was matters
25 nuclear, I think.

1 MR. B. CAMPBELL: I believe that's
2 correct.

3 MS. HOWES: That's right.

4 What I was going to refer her to and
5 certainly Mr. Watson is: Exhibit 3; Exhibit 4 which is
6 the environmental analysis; Exhibit 507, which I
7 believe is the Natural Environment and Health Effects
8 of Nuclear Report, and Exhibit 646 in which there is
9 environmental comparison of nuclear with other options.
10 And that was the completeness of our list.

11 THE CHAIRMAN: Thank you.

12 Mr. Campbell?

13 MR. B. CAMPBELL: Thank you, Mr.
14 Chairman.

15 RE-DIRECT EXAMINATION BY MR. B. CAMPBELL:

16 Q. I have a miscellaneous collection of
17 questions in no particular order but I think I will ask
18 Ms. Howes one question arising out of my friend Mr.
19 Watson's question.

20 In a ruling that this Board gave it
21 commented - I forget the exact matter it was in
22 relation to - I guess it must have been in connection
23 with the Update because it had to do with the changed
24 view of including fossil life extension in the Update,
25 and the Board commented on some cross-examination of

1 Mr. Shalaby and the suggestion had been made to Mr.
2 Shalaby that therefore the Board should disregard
3 certain evidence, and the Board indicated in its ruling
4 that it should take into account all of the evidence on
5 the matter and could not, in effect, disregard any.

6 I guess my question to you is whether in
7 putting forward the list, you are suggesting that any
8 evidence relating matters nuclear that are may be found
9 elsewhere on the record should be disregarded?

10 MS. HOWES: A. No, it shouldn't be
11 disregarded, I just wanted to make sure that the key
12 ones were noted.

13 Q. Thank you.

14 Mr. Dalziel, I think this is for you. It
15 has to do with some cross-examination of the panel by
16 Mr. Heintzman in relation to the amount of construction
17 of facilities that had to occur in a certain time
18 period. There was about 10 pages relating to this in
19 Volume 153, extending from pages 27120 to 27129. Like
20 everyone else who poses these questions to you, I don't
21 think it is necessary for you to turn up the
22 transcript.

23 In the course of that discussion there
24 was reference to page 15-9 of Exhibit 3 and page 30 of
25 Exhibit 682. I have made copies of these two pages,

1 and perhaps just for ease of reference I will
2 distribute them.

3 I don't think, Mr. Chairman, this package
4 needs an exhibit number; it's simply these particular
5 pages that are referred to.

6 In the course this cross-examination Mr.
7 Heintzman you may recall, Mr. Dalziel, had pointed out
8 that the new median forecast - and we are talking here
9 of the primary forecast - tended to track toward the
10 old, at time the DSP was prepared, low forecast, and I
11 believe you confirm that; do you recall that?

12 MR. DALZIEL: A. I think I recall
13 confirming that the new major supply requirements, the
14 results of the new major supply requirements currently
15 matched what was the 1989 lower results of the new
16 major supply requirements as opposed to median load
17 forecast tracking the lower load forecast.

18 Q. Would you agree with me that the
19 median load forecast currently does now track toward
20 the lower end of the bandwidth at the time the DSP was
21 prepared?

22 A. Yes, it does.

23 Q. Now, I want to look, starting first
24 at Exhibit 3, on this diagram. I am going to use the
25 CANDU units as an example. If we can look at the CANDU

1 units that would be under construction starting with
2 CANDU "A", and would you agree with me that the -- or
3 will be coming into service, rather, would you agree
4 with me that the CANDU "A" units come into service on
5 the diagram from page 15-9 of Exhibit 3 using the lower
6 supply curve, CANDU "A" starts to come into service
7 about 2008; is that about right?

8 A. That's about right.

9 Q. Looking at the amount of CANDU or
10 amount of nuclear generation that comes in over the
11 next six years to the 2014 end of the chart, the
12 diagram also shows four units for CANDU "A" and the
13 first two units of 4 for CANDU "B"; is that correct?

14 A. Yes, it does.

15 Q. And the CANDU "A" units are 880
16 megawatts each?

17 A. Yes.

18 Q. So that there are six units shown
19 coming into service at 881 megawatts?

20 A. Yes.

21 Q. Could you tell me how many megawatts
22 that is, please, in total?

23 A. You want a rough estimate?

24 Q. You never give rough estimates, in my
25 experience. Yes, if you would, please.

1 A. 5,286 megawatts.

2 Q. And that's six times the 881?

3 A. Yes, it is.

4 Q. And what is not shown on after that
5 the six-year period is, of course, that there is a
6 remaining two units, that is the other half of the
7 CANDU "B" station; is that correct?

8 A. That would follow on after the year
9 2014, that's correct.

10 Q. All right. Now, if you would turn
11 then to page 30 of Exhibit 682, which is the second
12 page of the handout, I want to start, what I would like
13 you to do is, you see where the first 670 megawatt unit
14 comes into service?

15 A. Yes.

16 Q. If you will take six years beyond
17 that and draw a vertical line, I take it you would
18 get - at least if I have drawn my line correctly - you
19 get seven units of 670 megawatts coming into service in
20 that six-year period. Is that the same number of units
21 that you get if you do that for the 6-year period?

22 A. Yes.

23 Q. How many megawatts are there in those
24 seven units in total?

25 A. 4,690 megawatts.

1 Q. If you look beyond the 6-year period,
2 within the confines of this chart, there are an
3 additional - again as I have drawn my line vertical -
4 there would be an additional two units coming into
5 service at 670 megawatts?

6 A. Yes, there would be.

7 Q. Now, my question to you after all of
8 that is: If you take these two views of nuclear units
9 coming into service, is there any significant
10 difference in your view as to the compression or
11 non-compression of construction of those facilities as
12 contemplated on the two pages?

13 A. I would say there is no significant
14 difference in the timing of the construction of the
15 facilities or the pattern of construction.

16 Q. Thank you.

17 Mr. Shalaby, this is, I think, one for
18 you. Could you please get before you - I am not sure I
19 have the volume number - it's page 28976 of the
20 transcript. It is on June 17th. I will just get the
21 volume number.

22 THE CHAIRMAN: 164.

23 MR. B. CAMPBELL: Thank you, Mr.
24 Chairman.

25 Q. The page number is 28976.

1 MR. SHALABY: A. I have got that.

2 Q. Now, if you look at, I think you were
3 answering questions here to Mr. Monger in relation to
4 price elasticity, and if you look at lines 4 and 5 you
5 say:

6 The results of produced by LMSTM, the
7 LMSTM model has a single equation that
8 would represent the price elasticity.
9 Do you see that?

10 A. Yes,

11 Q. And if you look down then to starting
12 at line 17, 18, 19 you say, in response to the next
13 question:

14 I am just saying the LMSTM model only
15 has a single equation and the load
16 forecasters and economists may use more
17 sophisticated modelling than that.

18 I would just like to you clarify, in the
19 second reference, whether you are referring to the same
20 single equation or are you saying as could be taken by
21 looking at the words on the face, that the LMSTM model
22 only has a single equation?

23 Is there more than one equation in the
24 LMSTM model generally as opposed to the equation that
25 represents price elasticity?

1 A. There are hundreds of equations in
2 LMSTM.

3 The reference here is that in treating
4 elasticity in a particular market segment, my
5 understanding that LMSTM has a single equation to deal
6 with that.

7 Q. Thank you.

8 Mr. Snelson, could you go to Volume 154
9 of the transcript, please. The page here is 27351.

10 Do you have that?

11 MR. SNELSON: A. Yes, I do.

12 Q. Mr. Heintzman is asking a question.
13 Dr. Connell comes in with a question to you, looking at
14 about line 17 to 23:

15 But what's different there is, I
16 presume that's not available in full at
17 least until 2020, so there must be some
18 difference in those two plans with
19 respect to the value because of the time
20 of availability, whether that amounts to
21 the whole of the 51 cents I don't think
22 was clear from their evidence.

23 You indicated to Dr. Connell:

24 I would have to check with Dr. Macedo
25 but I would expect that those

1 transmission upgrades were very likely
2 required, but there would be probably be
3 something further from whatever's the
4 western most point has been strengthened
5 to the Manitoba border.

6 That deals more or less with the
7 situation in Ontario. You go on to speak to the
8 situation in Manitoba. I guess my simple question to
9 you is whether you have had an opportunity to check
10 that with Dr. Macedo?

11 A. No, I haven't.

12 MR. B. CAMPBELL: Mr. Chairman, could I
13 get an undertaking number, please? I would like that
14 confirmed.

15 THE CHAIRMAN: All right.

16 THE REGISTRAR: 684.38.

17 ---UNDERTAKING NO. 684.38: Ontario Hydro undertakes to
18 provide a response to Dr. Connell's
19 question in Volume 154, page 27351, line
20 17.

21 MR. B. CAMPBELL: Q. Mr. Snelson, I
22 guess I am asking you, in this case it's kind of
23 impossible for the counsel to give the undertaking
24 which is the rule I have tried to teach you so
25 carefully and have been so wholly ignored on, whether
you will be prepared to check that and advise Dr.

1 Connell.

2 MR. SNELSON: A. I will indeed.

3 Q. Thank you.

4 Mr. Shalaby, I would come back to you
5 again, please. Volume 154 of the transcript. I want
6 to make sure that I have got the right page. And if
7 you could go to -- do you have the page 27259? I think
8 it's Volume 154, Mr. Shalaby?

9 MR. SHALABY: A. Yes, I have it.

10 Q. At line 17 the Chairman says to you:

11 Mr. Heintzman's point is you can't get
12 the CTUs without get approvals for them.

13 And you answer:

14 I accept that.

15 I guess I have two questions for the
16 panel. First for you, Mr. Shalaby, can you get the
17 CTUs by way of non-utility generation? Is that part of
18 a way to get CTUs?

19 A. Yes. That is clearly indicated in
20 many of our -- in the witness statement, for example,
21 supplementary witness statement and many of the other
22 recent exhibits, that we see short lead time gas-fired
23 options to be either Hydro owned and operated or
24 non-utility owned and operated.

25 Q. And, Ms. Howes, if I could also ask

1 you in that regard, with respect to CTUs, are CTUs the
2 subject of an existing exemption order?

3 [5:03 p.m.]

4 MS. HOWES: A. Yes, they are.

5 Q. And has that exemption order been
6 renewed regularly?

7 A. Yes, it has.

8 Q. Do you have any reason to believe
9 that that would not be the case in the future?

10 A. No, I don't.

11 THE CHAIRMAN: Exemption order for all
12 CTUs, of all classes and sizes?

13 MR. B. CAMPBELL: I think the order is an
14 exhibit already, Mr. Chairman. I don't have the number
15 right at my fingertips, but I believe it is.

16 I think as I stated when this matter came
17 up with the counsel for Dofasco, Mr. Hunter, I took the
18 position you did, which was that the best way to deal
19 with this was to actually look at the exemption order
20 and I certainly concur with that.

21 Subject to that, I am quite content to
22 have Ms. Howes describe it.

23 MS. HOWES: The exemption order was
24 established, I believe in 1976, and I quote:

25 The program of planning, designing,

1 constructing, operating, and maintaining
2 a new combustion turbine and diesel
3 generator units at existing sites to
4 cover emergency situations and/or a
5 predicted shortage of generating
6 capacity.

7 MR. SNELSON: And I believe it is Exhibit
8 142.45, which was a Panel 2 undertaking.

9 MR. B. CAMPBELL: Q. Mr. Snelson, if I
10 could ask you to get in front of you page 27282 of the
11 transcript, again cross-examination by Mr. Heintzman.
12 I believe it is on June 1st and 154 again. As I said,
13 27282. It is a discussion here with Mr. Heintzman
14 about the flue gas desulphurization program
15 environmental assessment. Do you recall that
16 discussion?

17 MR. SNELSON: A. Yes. I am just
18 refreshing my memory by glancing over the transcript,
19 but generally I do recall it, yes.

20 Q. Now, at line 18, Mr. Heintzman
21 asserts to you that the present situation, and for
22 purposes of my question you should perhaps take that as
23 I do, to be referring to the present situation with the
24 Update having been filed:

25 The present situation is much more

1 akin to the FGD program where you now say
2 that Hydro or you were unable to make up
3 your mind between two or three
4 technologies, is that it?

5 You answer:

6 The FGD program seems to me to be a
7 very different sort of undertaking.

8
9 The Chairman asks you to speak to the
10 matter of the Update, not to the matter of the
11 comparison between the two undertakings.

12 My question to you, though, is, could you
13 explain what you meant, please, when you said that the
14 FGD program seems to me a very different sort of
15 undertaking which is, of course, quite a different
16 assumption than Mr. Heintzman put forward in his
17 question?

18 A. I think Mr. Heintzman was pressing
19 that we should get an approval now for a decision that
20 didn't need to be made now, and that we couldn't make
21 up our mind between a number of technologies and
22 pointing out that the FGD approval did contemplate a
23 variety of technologies.

24 One very clear difference between these
25 undertakings is that the FGD approval was an approval

1 for a number of technologies to meet a need that was
2 really quite near in. It was things that we needed to
3 do within a short period of obtaining the approval.

4 But also, it is very different in that
5 the FGD approval was essentially for facilities to
6 modify existing stations with the objective of
7 improving their environmental performance. It wasn't
8 an approval for going out and acquiring new sites or
9 building new facilities on new sites. It was a much
10 smaller scale of undertaking and with the primary
11 purpose of improving the performance of some existing
12 plants.

13 Q. Thank you. On that same volume, Mr.
14 Dalziel, if you could go to page 27383, which is, I
15 believe, the second last page. There is an exchange
16 starting at about line 4 where Mr. Heintzman puts to
17 you the question:

18 "QUESTION: So nothing happens between
19 now and 1999, in terms of base load; is
20 that it, we just sort of --

21 "ANSWER: In terms of base load, the
22 way these plans were put together, that's
23 correct.

24 "QUESTION: So we just wait and don't
25 do anything on the base load until 1999;

1 is that the way these were all
2 constructed?

3 "ANSWER: That's the way these were
4 constructed."

5 Now, my question to you is, what in fact
6 is being referred to as happening in 1999? The range
7 of things obviously ranges from the start of the
8 definition phase through to filing the EA, through to
9 commitment or something else. But what is it that you
10 were referring to as happening in 1999 in that
11 exchange?

12 MR. DALZIEL: A. 1999 in this exchange,
13 my understanding is that it is assumed to be the date
14 that Hydro makes the decision that a major supply
15 facility is required, and in 1999 then it begins what
16 is necessary in order to bring that about as quickly as
17 possible.

18 Q. In terms of the schedules that have
19 been before this Board, there have been various points,
20 start of the definition phase, filing the environmental
21 assessment, commitment. Which one of those points
22 matches that definition that you gave? Or if there is
23 another point that matches it you should... We have
24 had a number of sort of points referred to and I just
25 wondered whether this 1999, in the way you describe it,

1 attaches to any particular point in that project life
2 cycle.

3 A. The start of the definition phase.

4 Q. Thank you.

5 I think this is for you, Dr. Long. Could
6 you go to Volume 164, please.

7 DR. LONG: A. I have it. Which page?

8 Q. 28945.

9 A. Yes.

10 Q. At this point in the transcript you
11 were having a discussion with Mr. Monger about the
12 concern for rates and you will see, for instance, at
13 page line 11 you answer:

14 "And the criteria is cost, and that I
15 think ultimately will be reflective of
16 low bills, but there is still a concern
17 for rates as well."

18 Do you recall that exchange?

19 A. Yes, I do.

20 Q. I want to produce to you a copy of
21 this year's OEB Reference Letter. I take it you would
22 be generally familiar with the Reference Letter about
23 this year and in previous years at the OEB?

24 A. Yes, usually.

25 MR. B. CAMPBELL: Perhaps I could get an

1 exhibit number.

2 THE REGISTRAR: 730.

3 ----EXHIBIT NO. 730: April 1, 1992, OEB Reference
4 Letter.

5 MR. B. CAMPBELL: Q. I would like to
6 direct your attention to the paragraph numbered 1 on
7 the first page of that letter, dated April 1.

8 A. Yes.

9 Q. And just to put it in context, this
10 is, Mr. Chairman, a letter that goes to the Chair of
11 the Ontario Energy Board pursuant to the provisions of
12 the Ontario Energy Board Act, which requires Ontario
13 Hydro to provide to the Minister a proposal, if it
14 proposes to change rates, and the Act requires the
15 Minister to refer it to the Ontario Energy Board for a
16 review.

17 I just ask you to confirm, Dr. Long, you
18 are involved in the rate case this year, I believe you
19 appeared in those proceedings.

20 A. Yes, I did.

21 Q. That is what Dr. Long did on his
22 Fridays.

23 And can you confirm that this is, in
24 fact, the reference letter for this year's OEB hearing?

25 A. Yes, it is.

1 Q. And if I could ask you to direct your
2 attention to the first numbered paragraph, the letter
3 reads:

4 I am specifying the following criteria
5 and factors for the guidance of the
6 Board. The Board shall examine and
7 report on the manner in which Ontario
8 Hydro has determined its revenue
9 requirement and the extent to which
10 Ontario Hydro has kept its proposed
11 revenue requirement for 1993 as low as
12 feasible.

13 My question to you, Dr. Long, is, has
14 language of identical or similar type been included in
15 the reference to the Ontario Energy Board in prior
16 years' rate reviews?

17 [5:15 p.m.]

18 A. Yes, I think a paragraph like this is
19 usually in the Reference Letter.

20 Q. Referring to keeping rates as low as
21 feasible?

22 A. Something along those lines, yes.

23 Q. Thank you. I think I have one more,
24 Mr. Chairman, and it refers to page 28 of Exhibit 706.
25 Again I have copy here, it might just facilitate moving

1 through this.

2 I think, Mr. Dalziel, this is probably
3 for you. Again what I am referring to is page 28 of
4 Exhibit 706, and Mr. Dalziel --

5 THE CHAIRMAN: Just for the record, that
6 was the bundle of documents that was filed by the CEG?

7 MR. B. CAMPBELL: Yes.

8 THE CHAIRMAN: On their cross-
9 examination?

10 MR. B. CAMPBELL: Yes.

11 Q. You recall, Mr. Dalziel, being
12 cross-examined by Mr. Starkman on this matter?

13 MR. DALZIEL: A. Yes, I do.

14 Q. I will take the 2017 figure where it
15 says capacity factor. Can you confirm for me whether
16 that capacity factor of 39.3 is in relation to fossil?

17 A. Yes, it is. It's in relation to the
18 total amount of fossil.

19 Q. Now, as I recall the discussion with
20 Mr. Starkman, the way that figure is arrived at is by
21 taking the total fossil and dividing it, the cumulative
22 fossil figure, dividing it by the terawatthours and
23 getting an average capacity factor. Do you recall
24 that?

25 A. Yes, it uses the cumulative fossil

1 capacity and the energy attributed to all the fossil
2 generation to derive at the capacity factor.

3 Q. Now, does that 39.3 figure mean that
4 the average capacity factor of all base load options,
5 base load fossil options added in the plan by 2016 is
6 less than 40 per cent?

7 A. No, it doesn't.

8 Q. Could you explain why that is your
9 answer, please?

10 A. The effect of including all of the
11 peaking facilities which would be operating at very low
12 capacity factors has the effect of lowering then the
13 average capacity factor of the cumulative amount of
14 fossil generation. The base load facilities or the 4
15 by 700 IGCC would typically -- we could expect to see
16 those operating around 70 per cent, 80 per cent level.

17 MR. B. CAMPBELL: Thank you.

18 Mr. Chairman, those are my questions in
19 re-direct and that concludes Ontario Hydro's Panel 10.

20 THE CHAIRMAN: Does that also conclude
21 Ontario Hydro's evidence in this hearing?

22 MR. B. CAMPBELL: Of course, except with
23 respect to matters which we may feel it necessary to
24 deal with in reply, that certainly concludes Ontario
25 Hydro's evidence and we have no plans to call a Panel

1 11 or subsequently numbered panel.

2 THE CHAIRMAN: Unless there is another
3 update.

4 MR. B. CAMPBELL: Or unless matters arise
5 where, as you have indicated from time to time, it
6 seems to be necessary to bring people back to deal with
7 particular matters, but I don't foresee very many of
8 those except, as I say, in reply.

9 THE CHAIRMAN: Won't you be putting in,
10 for instance, if there is a 19 - I can't be sure of the
11 year - if there is a 1993 load forecast, won't we see
12 that?

13 MR. B. CAMPBELL: Yes. We have given a
14 general undertaking to keep the Board advised of
15 matters which we see as material and of course things
16 that are on the annual planning cycle. I fully expect
17 we will be keeping the Board advised of those. And if
18 there is a necessity for a witness to appear to speak
19 to those, then that's a bridge we will cross when we
20 come to it.

21 THE CHAIRMAN: Also, Mr. Watson's client
22 and Mr. Heintzman's client, and maybe others, have put
23 in some reservations about cross-examination pending a
24 resolution of some data come out of the LMSTM.

25 MR. B. CAMPBELL: My understanding in

1 both cases, or certainly with respect to AECL, is that
2 AECL has advised the Board that it will not be pursuing
3 any additional cross-examination of this panel. That
4 was my understanding.

5 THE CHAIRMAN: Ms. Morrison is telling me
6 I should know some of the answers to some of these
7 questions I have asked you.

8 MR. B. CAMPBELL: My understanding is
9 that there is no one out there who is anything but
10 complete with respect to cross-examination of Panel 10.

11 THE CHAIRMAN: I take it that's right,
12 Mr. Watson?

13 MR. R. WATSON: Yes, Mr. Chairman, based
14 on the information we have received so far.

15 THE CHAIRMAN: All right. Now, that
16 means we adjourn to an uncertain date, I guess, or a
17 non-definite date, to await intervenor cases.

18 Now, I think that parties ought to
19 understand that they still should hold themselves in
20 readiness at the call of this Board when required. We
21 have sent out a document which puts as a tentative date
22 for the commencement of intervenor evidence October 26,
23 but that does not mean that we will not be sitting in
24 that intervening period. We may even be able to
25 arrange to start the intervenor cases earlier than

1 October 26th.

2 We do have a motion scheduled, two
3 motions scheduled for the 6th of July, which is a
4 Monday, one by IPPSO and others, and another by the
5 CEG.

6 I think we can give assurance and should
7 give assurance that we will not schedule anything
8 between the dates of July 16th and August 16th, so that
9 people who are making plans can rely on that. But
10 other than that, people should be in readiness to
11 attend when required.

12 We will, as we have in the past, try and
13 give as much lead time as reasonably possible, but this
14 is a dynamic hearing and we can't anticipate what may
15 happen.

16 MR. B. CAMPBELL: Mr. Chairman, just
17 before we adjourn, I do want to take the opportunity to
18 say one last thing about Panel 10.

19 I have sung the praises of various panels
20 and tried to convey to the Board the work that both
21 they and the people who support the panels in doing
22 interrogatories and so on have put in throughout this
23 case, and I don't wish to take away from any of those
24 remarks, but I think that the collection of people you
25 have before you here really are quite unique in that

1 respect.

2 They have carried a burden throughout
3 this case, and in particular Mr. Snelson and Mr.
4 Shalaby, Mr. Dalziel, but certainly Dr. Long and Ms.
5 Howes and Dr. Tennyson have been involved. I have had
6 a rather unique insight in seeing their involvement
7 throughout, and I can tell you that all of them have
8 made an absolutely astounding effort to bring all of
9 their intelligence and wit to all of the processes that
10 have supported this hearing.

11 They have worked unending hours. I can
12 record that they have worked those with only limited
13 recognition of all of the efforts that have gone in.
14 But this panel has done an incredible amount of work
15 that has contributed to this case going in the way it
16 has. In that regard I point out that I think we are
17 well under our estimate of the number of days we would
18 be in chief, and I think the responsibility for that
19 lies with the kind of work that has been done to put
20 forward matters on a succinct and straightforward
21 basis, trying to emphasize the important points and
22 trying, with mixed success sometimes, not to get lost
23 in the weeds.

24 These people have done an incredible
25 amount of work.

1 THE CHAIRMAN: Well, as in other panels,
2 I think it inappropriate for me to make any comment on
3 that and I will not do so.

4 We are now adjourning to an indefinite
5 date, but there will motions on the July 6th.

6 Thank you very much.

7 THE REGISTRAR: This hearing will be
8 adjourned indefinitely until a motion on July the 6th.

9 ---Whereupon the hearing was adjourned at 5:30 p.m., to
10 be reconvened sine die. (Motions on July 6th.)

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